



# CLEAN HARBORS BATON ROUGE, LLC BATON ROUGE, LOUISIANA

Post Closure Permit Renewal Application Landfill 717

> Volume 3 of 5 Appendix N

Prepared for:

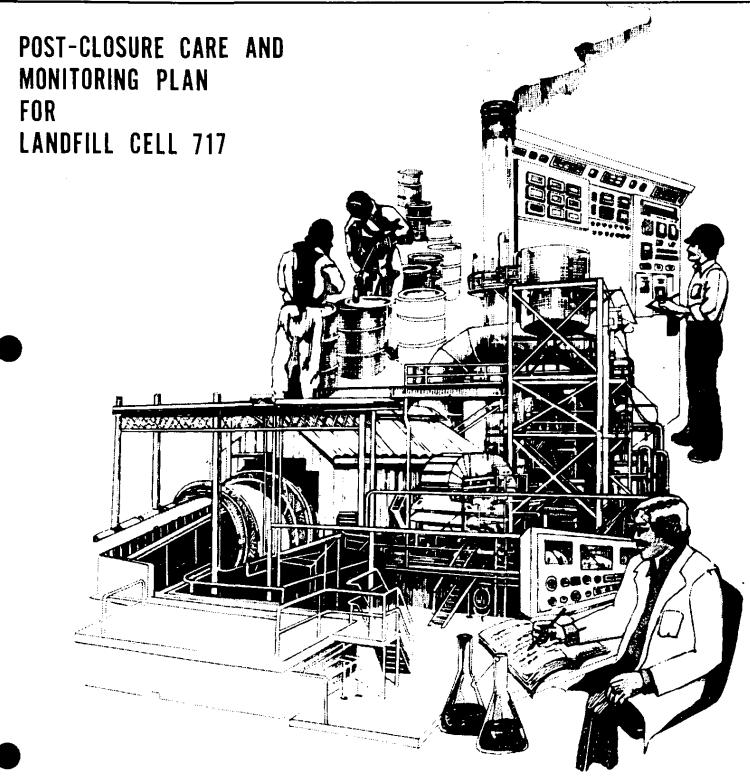
Clean Harbors Baton Rouge, LLC 13351 Scenic Highway Baton Rouge, Louisiana 70807

> Agency Interest #1516 LAD 010395127-PC-3

> > March 2008

# APPENDIX N ENGINEERING REPORTS

# ROLLINS ENVIRONMENTAL SERVICES (LA), INC.



BATON ROUGE FACILITY



# State of Louisiana



#### Department of Environmental Quality

M.J. "MIKE" FOSTER, JR. GOVERNOR

J. DALE GIVENS
SECRETARY

May 13, 1996

CERTIFIED MAIL Z 012 943 042 RETURN RECEIPT REQUESTED RECEIVED

MAY 16 1995

Mr. Thomas E. Reames President Rollins Environmental Services (LA) Inc. Post Office Box 74137 Baton Rouge, Louisiana 70874-4137 OFFICE OF THE PRESIDENT RES (LA) INC.

RE:

Rollins Environmental Services (LA) Inc.

LAD 010 395 127

Post-Closure Permit Application for Landfill Cell 717

MAY 1991

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/lronmentai/Len neS(LA) Inc

Dear Mr. Reames:

The Louisiana Department of Environmental Quality - Hazardous Waste Division (LDEQ-HWD) has completed a completeness review of the above referenced document. The Post-Closure application has been determined to be deficient. Deficiencies have been identified and are included in the enclosed Notice of Deficiency.

This letter constitutes notification that you are required to make the necessary corrections to these deficiencies and submit eight (8) copies to the LDEQ-HWD within thirty (30) days after receipt of this letter. You are hereby notified that failure or refusal to comply with this notice within the specified time frame may subject Rollins Environmental Services(LA) to possible enforcement procedures as mandated by the Louisiana Environmental Quality Act, LA. R.S. 30:2001 et seq., and particularly Section 2025 C(3) of the Act.

The NOD responses should be submitted as a stand alone, labelled bound document that specifically addresses the deficiencies.





OFFICE OF SOLID AND HAZARDOUS WASTE

HAZARDOUS WASTE DIVISION

P.O. BOX 82178

BATON ROUGE LOUISIANA 70554-2178

TELEPHONE (504) 765-0355

FAX (504) 765-0617

Rollins Environmental Services (LAD 010 395 127) Post-Closure Permit Application for Cell 717 - NOD Page: two

Thank you for your cooperation. If you have any questions concerning this matter, please contact Mr. Blaise Guzzardo or Mr. Emad Nofal of the HWD-Permits Section, at (504) 765-0272.

Sincerely,

James H. Brent, Ph.D.

Jane H. Brent

Administrator

JHB/EN/en

Attachment: Notice of Deficiency

c: Ms. Laurie King, U.S. EPA

Ms. Audray Lincoln, U.S. EPA

#### ROLLINS ENVIRONMENTAL SERVICES (LA) INC.

#### LAD 010 395 127

# COPLETENESS REVIEW OF POST-CLOSURE PERMIT APPLICATION FOR CELL 717

#### NOTICE OF DEFICIENCY

Num	ber Regulation	Comment
1 .	LAC 33:V.517.B.9 & 10	The applicant must submit or reference the location of a map indicating the proposed location of groundwater wells and the proposed "point of compliance" for Cell 717.
2	LAC 33:V.517.B.12	The applicant must submit or reference the location of a map indicating the location of barriers for drainage or flood control associated with the closed Cell 717.
3	LAC 33:V.517.G	The applicant must submit or reference the location of an updated copy of the general inspection schedule required by LAC 33:V.1509.B. Include, where applicable, as part of the inspection schedule, specific requirements in LAC 33:V.2507.
4	LAC 33:V.517.M	The applicant must submit or reference the location of a post-closure plan as required by LAC 33:V.3511 and 3523. Include, where applicable, as part of the plans, specific requirements in LAC 33:V.2521.
5	LAC 33:V.520	The applicant must provide the required information pertaining to Groundwater Protection requirements for the closed Cell 717.
6	LAC 33:V.533	The applicant must provide the information requirements for landfills, specific to closed Cell 717.
7	LAC 33:V.1509	The applicant must address general inspection requirements as outlined in comment under LAC 33:V.517.G, above.
8	LAC 33:V, Chapter 22	Attachment L (Landfill Cell 717 Closure and Post Closure Care Plan), Section 3.0 (Disposed Wastes), Page 3-1, must state that Rollins has adopted Louisiana Environmental Regulatory Code Part V. Hazardous Waste and Hazardous Materials, as a guideline for final landfill disposal, specifically Chapter 22. "Chapter 14.2j" must be replaced by the above.
9	LAC 33:V.2223	Attachment A (Post Closure Plan), Section IV.F, must clarify what disposal activity is involved with the collected leachate that is treated in the organic waste water treatment facility. If the treated waste is to be land disposed, it must be treated according to this regulation. If the treated waste is to be disposed of according to a specific permit (such as a NPDES permit), that must be stated.
10	LAC 33:V.2223	Attachment D, Section II.A, Paragraph 5, must state that any treatment of leachate in Rollins' wastewater treatment system will be in

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Numbe	r Regulation	Comment
	- <u>-</u> -	accordance with this regulation or a specific permit (such as a NPDES permit).
11	LAC 33:V.2223	Attachment D, Section II.A, Paragraph 3, must state that any land disposal of leachate will be in accordance with this regulation.
12	LAC 33:V.2223	Attachment H (Contingency Plan), Exhibit H-5 (Spill Prevention Control and Countermeasures Plan), Spill Control, Storage Facilities, Paragraph 2 and 4, pages iv and v, must state that any sludge or spent absorbent material that is to be land disposed will be disposed of in accordance with this regulation.
13	LAC 33:V.2223	Attachment H (Contingency Plan), Exhibit H-5 (Spill Prevention Control and Countermeasures Plan), General Response For Spill Containment, Liquid Spills, Paragraph 1, page xiii, must state that any spent absorbent material placed in Rollins' landfill will be in accordance with this regulation.
14	LAC 33:V.2245	Attachment D, Section II.A, Paragraph 2 and 3, must state that all samples obtained from the leachate collection system will be analyzed according to this regulation.
15	LAC 33:V.2245	Attachment D, Section II.B, Paragraph 2, must state that all samples obtained from the leachate detection wells will be analyzed according to this regulation.
16	LAC 33:V.2245	Attachment H (Contingency Plan), Exhibit H-5 (Spill Prevention Control and Countermeasures Plan), General Response For Spill Containment, Solid Waste Spills, Paragraph 1, page xiii, must state that all waste analysis be in accordance with this regulation.
17	LAC 33:V.2245	Attachment L (Landfill Cell 717 Closure and Post Closure Care Plan), Section 5.6 (Leachate Collection And System), Paragraph 3, Page 5-5, must state that all waste analysis will be in accordance with this regulation.
18	LAC 33:V.2245	Attachment L (Landfill Ceil 717 Closure and Post Closure Care Plan), Section 5.7 (Leak Detection System), Paragraph 2, Page 5-6, must state that all waste analysis will be in accordance with this regulation.
19	LAC 33:V.2271	Attachment D, Section II.A, Paragraph 5, must specify the exact location "disposal by deepwell injection" will occur and state that the disposal will be in accordance with this regulation.
20	LAC 33:V, Chapter 25	The applicant must address the requirements for landfills specific to the closed Cell 717.

ROLLINS ENVIRONMENTAL SERVICES (LA) INC. (LAD 010 395 127) POST-CLOSURE PERMIT APPLICATION FOR CELL 717 COPLETENESS REVIEW - NOD

2

Numb	er Regulation	Comment
21	LAC 33:V, Chapter 33	The applicant must address the groundwater protection requirements of Chapter 33 as stated in chapter VI (ground water protection) in the final modified permit.
22	LAC 33:V, Chapter 35	The applicant must address the post-closure requirements of LAC 33:V, Chapter 35, Subchapter B.
23	LAC 33:V.3709	Attachment B (Post-Closure Cost Estimate), the cost estimate should be updated and adjusted to the current dollars according to this regulation.
24	LAC 33:V, Chapter 43	The interim status requirements of LAC 33:V, Chapter 43 are not applicable to this permit application. A Post-Closure Permit will be issued for the closed landfill cell; therefore, the requirements for permitted facilities must be addressed, as outlined in preceding comments.

Closuse - 7/7
Env/Legal Distribution (LA)

Administration
Operations
Remediation
Specialist/Environmental
Technical



P.O. Box 74137 Baton Rouge, Louisiana 70874-4137 Phone 504/778-1234, Fax 504/778-3510

Corporate \_\_\_\_\_

Vice-President/Environmental Director/Environmental

HAND DELIVERED

January 29, 1996

Mr. Blaise Guzzardo
Office of Solid and Hazardous Waste
Louisiana Department of Environmental Quality
P. O. Box 82178
Baton Rouge, Louisiana 70884-2178

RECEIVED

JAN 3 1 1996

Dept. of Environmental Quality
Hazardous Waste Division

RE: Post-Closure Permit Application Copies for Landfill Cell 717

Dear Mr. Guzzardo:

Attached per your request please find four (4) copies of the Post-Closure Care and Monitoring Plan for Landfill Cell 717 at the Rollins Environmental Services (LA) Inc. facility. Final closure of Landfill Cell 717 was approved by your office by letter dated December 18, 1995.

If you have any questions or need additional information regarding this submittal, please call Mr. Steve Cange of our staff at 778-3607.

Sincerely,

Michael F. DeCarlo

President

MFD/SWC/dmo



P.O. Box 74137 Baton Rouge, Louisiana 70874-4137 Phone 504/778-1234, Fax 504/778-3510

#### **CERTIFIED MAIL # P 857 527 204**

November 28, 1995

Glenn A. Miller, Assistant Secretary Office of Solid and Hazardous Waste Louisiana Department of Environmental Quality P. O. Box 82178 Baton Rouge, Louisiana 70884-2178

Attn: Mr. Blaise Guzzardo

RE: Post-Closure Permit Application for Cell 717

Dear Mr. Miller:

We are in receipt of your letter dated November 20, 1995 requesting a Post-Closure Permit Application for Landfill Cell 717. In accordance with discussions between Messrs. Guzzardo and Brady of your staff and Mr. Steve Cange of RES(LA), please refer to our submittal dated October 31, 1989 of eight (8) bound copies of the Landfill Cell 717 Post-Closure Permit Application (copy of transmittal letter attached).

Submittal of this Post-Closure Permit Application for Cell 717 to the LDEQ-HWD was required by letter dated July 10, 1989 from your office, and was prepared in accordance with the detailed Post-Closure Permit Application guidelines attached to that letter (copy attached).

Consequently, we believe that the Cell 717 Post-Closure Permit Application requested in your November 20 letter has already been submitted according to Hazardous Waste Division guidelines.

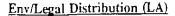
If you have any questions or want to discuss this further, please contact Mr. Steve Cange of our staff at 778-3607.

Sincerely,

Michael F. DeCarlo

President

MFD/SWC/dmo



Administration
Operations
Remediation

Specialist/Environmental Technical

Corporate

Vice-President/Environmental Director/Environmental

## Env/Legal Distribution (LA)

Administration
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Technical

# State of Louisiana

MOV 2 7 1995

Department of Environmental Quality

Corporate

November 20, 1995

William A. Kucharski Secretary

Vice-President/Environmental
Director/Environmental

CERTIFIED MAIL Z 030 805 642 RETURN RECEIPT REQUESTED

RECEIVED

Mr. Michael F. DeCarlo President Rollins Environmental Services (LA), Inc. P.O. Box 74137 Baton Rouge, Louisiana 70874-4137

NOV 27 1995 OFFICE OF THE PRESIDENT RES (LA) INC.

RE:

Rollins Environmental Services (LA), Inc., RES (LA)

LAD 010 395 127

Request for Post-Closure Permit Application for Cell 717

Dear Mr. DeCarlo:

Pursuant to the LAC 33:V.303, the Louisiana Department of Environmental Quality, Hazardous Waste Division (LDEQ-HWD) formally requests RES (LA), Inc. to submit the above referenced post-closure permit application.

Within 180 days from the date of receipt of this letter, RES (LA) must submit (1) original and seven (7) copies of the post-closure permit application in the format, outline and numbering system established by the requirements of the LDEQ-HWD.

Please be informed that it will be necessary to specifically address all application requirements for post-closure contained in LAC 33:V, Subpart 1.

If any information in the application is considered confidential as specified in LAC 33:V.319, or if your firm wishes to request a variance or exemption provided within the regulations, it will be necessary for this request to be indicated in a cover letter accompanying each copy of the application.

Please be advised that failure to furnish the application on time or failure to furnish, in full, the information required by the regulations may subject your company to possible enforcement procedures as mandated by the Louisiana Environmental Quality Act, La. R.S. 30:2001 et. Seq., and particularily Section 2025 of the Act.

OFFICE OF SOLID AND HAZARDOUS WASTE

HAZARDOUS WASTE DIVISION

P.O. BOX 82178

BATON ROUGE, LOUISIANA 70884-2178



TELEPHONE (504) 765-0355 FAX (504) 765-0617

AN EQUAL OPPORTUNITY EMPLOYER



Michael F. DeCarlo Rollins Environmental Services (LA), Inc. Page 2

Should you have any questions, please contact Mr. Blaise Guzzardo of LDEQ-HWD, Permits Section, at (504) 765-0272.

Sincerely,

Glenn A. Miller Assistant Secretary

GAM/BG/tb

c: Ms. Laurie F. King, USEPA, Region VI Ms. Ann Zimmerman, USEPA, Region VI



P.O. Box 74137, Baton Rouge, LA 70874-4137, 504/778-1234 General Offices, 504/778-1242 Sales Office

August 3, 1990

Mr. Timothy W. Hardy Assistant Secretary Office of Solid & Hazardous Waste Louisiana Department of Environmental Quality P. O. Box 44307 Baton Rouge, LA 70804-4307

RE: AMENDMENT TO THE POST-CLOSURE PLAN - LANDFILL CELL 717 - RES (LA) DATED OCTOBER 29, 1989 (SUBMITTED OCTOBER 31, 1989)
LDEQ SUBMITTALS - JULY 10 AND OCTOBER 10, 1989
RES (LA) RESPONSES - AUGUST 9 AND SEPTEMBER 5, 1989

Dear Mr. Hardy:

We are submitting herein eight (8) copies of revised pages ii and 1 through 3 of Attachment D for the subject post-closure plan, which was submitted to your department on October 31, 1989.

These pages reflect clarifications of the waste analysis plan for the post-closure care of Cell 717.

We trust you will find this amendment and the post-closure plan satisfactory. Your prompt attention to the review and approval of this amended document would be appreciated.

Should you have any questions regarding this information, please do not hesitate to call.

Sincerely,

George B. Martin

President

GBM/JCA/MJH/MC/jd

Attachment - 8 copies

cc: Glenn Miller w/o attachments
Yong Gho w/o attachments

#### ATTACHMENT D WASTE ANALYSIS PLAN

#### POST-CLOSURE CARE AND MONITORING PLAN FOR LANDFILL CELL 717

#### Table of Contents

I.	INTRODUC	TION
II.	A. Leachate	AMPLING AND ANALYSIS PROCEDURES 1  Collection System 1  tection Wells 2
III.	A. Personne B. Internal	ASSURANCE/QUALITY CONTROL PROGRAM  Program  Programs
		List of Exhibits
Exhibit Exhibit Exhibit Exhibit	D-2 D-3	Sampling and Analytical Methodology Quality Assurance/Quality Control TCLP Procedure Table CCWE (40 CFR 268.41)

#### ATTACHMENT D WASTE ANALYSIS PLAN

#### POST-CLOSURE CARE AND MONITORING PLAN FOR LANDFILL CELL 717

#### I. INTRODUCTION

This Waste Analysis Plan documents the sampling procedures, analytical methodology employed, and the Quality Assurance/Quality Control program that assures sound information has been developed for the safe post-closure care of RES(LA) Landfill Cell 717. The Plan is composed of the following procedures and programs:

On-site Sampling Procedures are utilized to insure RES(LA) practices safe, accurate and reliable sampling of leachate and/or other waste liquids from the landfill cell.

Quality Assurance/Quality Control Program ensures that leachate and/or waste liquid sampling and subsequent analyses are accurate, precise and representative.

#### II. ON-SITE SAMPLING AND ANALYSIS PROCEDURES

#### A. Leachate Collection System

There are currently 23 individual leachate collection wells located at various points throughout the RES(LA) Landfill Cell 717. Each well is equipped with a pump with individual sampling port. Sampling for each well occurs at this point. The wells then pass into a common header and the leachate is pumped into a collection tank.

Samples will be obtained from each operating well once a year. These samples will be composited by subcells within the landfill and analyzed for Volatile Organic Compounds (Priority Pollutant List), Base-Neutral Extractables (Priority Pollutant List), Acid Extractables (Priority Pollutant List), Total Organic Halogens (TOX), Total Organic Carbon (TOC), Chemical Oxygen Demand (COD), and NPDES Metals using EPA and/or LDEQ approved analytical methods by an EPA Certified CLP Laboratory.

On an annual basis, samples of RES(LA) leachate (from all active and inactive cells on site) will be composited and the composite sample will be analyzed for all RCRA Characteristic Classifications (D-Waste Classifications) to allow for proper classification of any off-site disposal of leachate collected from the landfill cell(s).

Analytical results will be compiled on an annual basis and maintained in files by RES(LA).

Disposal of the leachate in the collection tank will be accomplished by 1) treatment in the RES(LA) wastewater treatment system, 2) disposal by deepwell injection, and/or 3) incineration by RES(LA) for as long as incinerator is operational.

#### B. <u>Leak Detection Wells</u>

There are currently 3 individual leak detection wells located at various points for RES(LA) Landfill Cell 717. Each well is equipped with a pump with individual sampling port. Sampling for each well occurs at this point.

Samples will be obtained from each well once a quarter. These samples will be analyzed for Volatile Organic Compounds (Priority Pollutant List) and Chemical Oxygen Demand (COD) using EPA and/or LDEQ approved analytical methods by an EPA Certified CLP Laboratory.

Analytical results will be compiled on an annual basis and maintained in files by RES(LA).

Prior to on-site disposal of liquids collected from the landfill, RES(LA) will analyze the liquid(s) according to the RES(LA) Sampling and Analytical Methodology as shown in Exhibit D-1.

#### III. QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

RES(LA) has established a comprehensive QA/QC Program to provide assurance that laboratory sampling and analysis are accurate, precise, complete, representative and comparable. Exhibit D-2, Quality Assurance/Quality Control, further details this Program.

#### A. Personnel

RES(LA) Laboratory Department adheres to a policy of hiring well-educated, experienced personnel in order to maintain the high standards of excellence expected of their work. New hires receive extensive on-the-job training in sampling and analytical procedures and techniques. All employees are encouraged to continue their education by participating in a liberal Educational Reimbursement Program.

#### B. Internal Programs

RES(LA) practices several internal procedures for the purpose of QA/QC. These procedures include:

#### 1. Practicing Uniform Sampling Techniques

The sampling and analytical methods used by RES(LA) are either Standard Methods, EPA Methods or ASTM Methods. RES(LA) practices

several other procedures which ensure the integrity of the sampling and analytical methods. These procedures include thorough personnel training in sampling techniques which yield a uniform sample indicative of the material.

 Confirmation of Laboratory Accuracy Using Instrument Calibration and Maintenance

As per EPA SW-846, analytical instruments are frequently calibrated in addition to routine preventative maintenance. The calibration procedures are those recommended by the corresponding EPA analytical method. Calibration standards are prepared from certified standard solutions or from commercially-obtained Standard Reference Materials.

Personnel Training Programs

RES(LA) trains and supervises all new employees in proper usage of laboratory equipment. Each laboratory analyst is issued a Laboratory Procedures Manual and is trained on the analytical procedures detailed therein.

4. EPA SE-846 QA/QC Procedures

In order to ensure the reliability of analytical data, Blank, Duplicate, and Spike analyses are run on a regular basis on all analytical procedures as specified in EPA SW-846. This data is utilized to verify the validity of the laboratory results.

#### C. External Programs

Since 1984, RES(LA) has voluntarily participated in an external QA/QC program sponsored by the EPA. RES(LA) also obtains calibration standards/samples from qualified commercial sources on a quarterly basis for QA/QC purposes.

Quality Assurance/Quality Control programs at outside commercial EPA Certified CLP Laboratories utilized by RES(LA) are established and controlled by the EPA regulations governing the certification of said laboratories. The EPA audits each laboratory's QA/QC program on a regular basis as a condition for the laboratory certification.

#### RECEIPT

I hereby acknowledge receipt on behalf of the Louisiana Department of Environmental Quality of a letter to Mr. Timothy W. Hardy, Office of Solid & Hazardous Waste from Mr. George B. Martin, President, Rollins Environmental Services (LA) Inc. dated August 3, 1990 regarding Amendment To The Post-Closure Plan - Landfill Cell 717, along with eight (8) copies of Amendment. Also included are copies of the letter only for Mr. Glenn Miller and Mr. Yong Gho.

<u>3000</u> <u>9-7-90</u>
Signature Date



P.O. Box 74137, Baton Rouge, LA 70874-4137, 504/778-1234 General Offices, 504/778-1242 Sales Office

October 31, 1989

Mr. Timothy W. Hardy Assistant Secretary Office of Solid & Hazardous Waste Louisiana Department of Environmental Quality P. O. Box 44307 Baton Rouge, LA 70804-4307

RE: POST-CLOSURE PLAN - LANDFILL CELL 717 - RES (LA)
LDEQ SUBMITTALS - JULY 10 AND OCTOBER 10, 1989
RES (LA) RESPONSES - AUGUST 9 AND SEPTEMBER 5, 1989

Dear Mr. Hardy:

We are submitting herein for your review and approval eight (8) copies of the Post-Closure Plan for Landfill Cell 717 located at the RES (LA) Baton Rouge facility. This reformatted information, which was requested in your letter dated July 10, 1989, is contained in two (2) volumes (Volumes I and II).

Should you have any questions regarding this information, please do not hesitate to call.

Sincerely,

Thomas G. Bramlette

Vice President

TGB/JCA/MJH/MC/jd

Attachment - 8 copies Volumes I and II

#### RECEIPT

I hereby acknowledge receipt on behalf the Louisiana Department of Environmental Quality of a letter to Mr. Timothy W. Hardy from Mr. Thomas G. Bramlette of Rollins Environmental Services (LA) Inc. dated October 31, 1989 regarding the Post-Closure Plan - Cell 717. Also included are eight (8) copies of the above mentioned plan.

Hope Harriman

Signature

Date

10/31/89



**BUDDY ROEMER** Governor

AC framette : of Louisiana

of Environmental Quality



October 10, 1989

OCT 1 6 1989

OFFICE OF THE VICE PRESIDENT RES (LA) INC.

CERTIFIED - RETURNED RECEIPT REQUESTED (P 104 089 306)

Mr. Thomas C. Bramlette Vice-President Rollins Environmental Services Post Office Box 74127 Baton Rouge, Louisiana 70874-4137

> RE: Rollins Environmental Services, LAD010395127 Post-Closure Status - 30 day Post-Closure Permit Application Extension for Submission of Post-Closure Attachments for Landfill Cell 717.

Dear Mr. Bramlette:

The Louisiana Department of Environmental Quality-Hazardous Waste Division (LDEQ-HWD) is in receipt of your letter dated September 25, 1989, requesting an additional thirty (30) days for the submission of Post-Closure Permit application for your hazardous waste landfill.

Due to the time required to facilitate the completion of Post-Closure Permit application of Landfill Cell 717, this Department concurs with the request for a thirty (30) day extension. Your new Permit expiration date is now October 31, 1989.

Should you have any questions concerning this matter, please contact Byron Nagel or Dr. Yong S. Goh at (504) 342-4685.

Sincerely.

TIMOTHY W. HARDY, Assistant Secretary Office of Solid and Hazardous Waste

TWH:YSG:pgw



P.O. Box 74137, Baton Rouge, LA 70874-4137, 504/778-1234 General Offices, 504/778-1242 Sales Office

September 25, 1989

Mr. Glenn Miller Administrator Office of Solid and Hazardous Waste Louisiana Department of Environmental Quality P. O. Box 44307 Baton Rouge, LA 70804-4307

SUBJECT: LAD010395127-ROLLINS ENVIRONMENTAL SERVICES (LA) INC.

FACILITY "POST-CLOSURE PERMIT REQUIREMENTS

LADEQ LETTER DATED JULY 10, 1989

RES (LA) RESPONSE DATED AUGUST 9, 1989

Dear Mr. Miller:

As you are aware, RES (LA) received a letter from the Louisiana Department of Environmental Quality dated July 10, 1989 requesting information on hazardous waste management units that have been closed or are undergoing closure and which will require post-closure care and monitoring. RES (LA) in its response dated August 9, 1989 listed Landfill Cell 717 as the only unit that currently will require post-closure care. It is also stated that all information requested for post-closure care had been addressed in the approved closure and post-closure plan and in the Part II Permit Application.

We understand, based on conversations between Messrs. John Arbuthnot of RES and Byron Nagel on September 22, 1989, that this information is still required in a different format than submitted previously. The magnitude of information, compilation and reformatting requested is such that it cannot be completed in a short time.

As a result, RES (LA) respectfully requests a 30 day extension from the date of this letter to fulfill this request. Your prompt attention to this request will be greatly appreciated. Should you have any questions, please do not hesitate to call.

Sincerely,

Thomas G. Bramlette

Vice President

TGB/JCA/MJH/MC/jd



P.O. Box 74137, Baton Rouge, LA 70874-4137, 504/778-1234 General Offices, 504/778-1242 Sales Office

August 9, 1989

Mr. Timothy W. Hardy Assistant Secretary Office of Solid and Hazardous Waste Louisiana Department of Environmental Quality P. O. Box 4307 Baton Rouge, LA 70804

SUBJECT: LDEQ LETTER DATED JULY 10, 1989

LAD010395127

POST-CLOSURE PERMIT REQUIREMENTS

ROLLINS ENVIRONMENTAL SERVICES (LA) INC.

Dear Mr. Hardy:

This letter is in response to your correspondence dated July 10, 1989 (received July 17, 1989), in which information was requested for hazardous waste management units which have been closed or are undergoing closure and which will require post-closure care and monitoring.

The only unit with a closure permit or in the process of closing which will require a post-closure permit is Cell 717. RES (LA) has an approved closure and post-closure plan for Landfill Cell 717. This unit is currently undergoing closure as a landfill under Permit No. LAD010395127-CP4. A revised facility closure and post-closure plan was submitted to LDEQ on May 23, 1989, including Cell 717. The Part II Permit Application submitted by this facility, which applies to Cell 717 as well, contains all of the other attachments mentioned in your letter. (As you are aware, a draft Part II permit, which addresses these matters, has already been revised). Thus, I believe all of the information your letter discusses has been submitted for Cell 717.

We trust that you find this letter responsive to your request. Should you have any questions, please do not hesitate to call.

Sincerely,

Thomas G. Bramlette

Vice President

TGB/JCA/MJH/MC/jd



# State of Louisiana

### Department of Environmental Quality



BUDDY ROEMER Governor PAUL TEMPLET
Secretary

July 10, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED P 817 071 127

Mr. Thomas G. Bramlette Vice President Rollins Environmental Services Post Office Box 73877 Baton Rouge, Louisiana 70897

Subject: Rollins Environmental Services, Baton Rouge

(LAD 010395127

Post Closure Permit Requirements

Dear Mr. Bramlette:

The Louisiana Department of Environmental Quality-Hazardous Waste Division (LDEQ-HWD) is now in the process of preparing Post Closure Permits in accordance with EPA Federal Regulatory Requirements of 40 CFR Part 270.1.C. This permit is to be based upon data compiled and submitted by facilities which have closed, or are in the process of closing hazardous waste management unit(s) which will require post closure care and monitoring. The permit will be issued by this administrative authority and shall cover the maintenance and monitoring of the closed unit(s) for a period of thirty (30) years. All information supplied shall meet the requirements of LAC 33:V. Chapters 4344 through 4395 and 4405through 4413, the attached guidance, and appropriate Federal Regulations. It is necessary that this information be submitted to this Department by August 9, 1989 to facilitate the processing of these permits. It is noted that the majority of this information had been submitted at the time closure permits were evaluated and approved for each unit closing. This information must be updated and resubmitted so that this Department can complete the permit review and issuance.

Rollins Environmental Services Page Two

Should there be further questions concerning this matter, please contact Dr. Yong Goh at (504) 342-4685.

Sincerely,

TIMOTHY W. HARDY, Assistant Secretary Office of Solid and Hazardous Waste

TWH:YSG:ys

#### POST-CLOSURE PERMIT INFORMATION

#### Introduction

40 CFR Part 270.1, EPA Hazardous Waste Permit Program requires that all facilities which close a hazardous waste management unit must have an approved Post-Closure Permit covering, if applicable, the maintenance and care of that unit during the post-closure period of thirty (30) years. The purpose of this guidance is to assist your facility in the preparation of information which will be used as attachment documentation to the permit. This should allow for uniformity in the response and compilation for the issuance of all Post-Closure Permits.

The actual Post-Closure Permit document resembles the LAC Part II Operating Permit except for the fact that it is specific to post-closure and has a thirty (30) year compliance period. The Hazardous Waste Division has administered post-closure in the past through the closure plan when a unit was closed. Now it is necessary to cover units which require post-closure with a separate permit with specific regulatory language and documentation. Resubmission of post-closure information will facilitate the need for up-to-date data.

#### ATTACHMENT TO POST-CLOSURE PERMITS

The following is a list of required attachments which will be listed in the Table of Contents in the Post-Closure Permit:

#### Attachments

- A. Post-Closure Plan
- B. Post-Closure Cost Estimates
- C. Post-Closure Financial Assurance
- D. Waste Analysis Plan
- E. Ground Water Monitoring Plan
- F. Corrective Action Plan
- G. Monitoring Well Locations
- H. Contingency Plan
- I. Personnel Training Plan
- J. Inspection Schedule
- K. Operating Record

All submissions shall correspond to these attachments in description and assignment.

#### Attachment A Post-Closure Plan

The requirements for the Post-Closure Plan are found in LAC 33:V.4477 through 4495 Also listed below are additional items to address in the plan.

Does the plan provide for thirty (30) years care after the date closure is completed on the unit?

Does the plan provide for the following activities:

- 1) A description of planned monitoring and frequencies at which to be performed?
- 2) A description of planned maintenance and frequencies at which to be performed?
- 3) A description of planned leachate collection and frequencies at which to be performed?
- 4) A description of security and frequencies at which inspections are to be performed?
- 5) Maintenance of monitoring equipment?
- 6) Maintenance of the cover:
  - a) erosion control and/or repair?
  - b) vegetation and/or fertilization?
  - c) mowing maintenance?
  - d) perimeter benchmarks, security fence?
- 7) Post-Closure Contact?
  - a) name?
  - b) address?
  - c) phone number?

Does the plan provide for:

- 1) submission of a survey plat, documenting type, location and quantity of hazardous waste at this unit, to the local land authority?
- 2) notation in the deed that the property was used to manage hazardous waste and its use is now restricted?
- 3) submission of signed certification by the owner/operator that the notice to the land authority and notice to the deed has been done in accordance with the LAC 33:V.3525.

Does the plan provide for certification by an independent, registered, professional engineer that all activities and requirements of post-closure had been performed according to the approved post-closure plan?

A description of the design and installation of the cover to include "as built" drawings of the closed unit.

#### Attachment B Post-Closure Cost Estimates

The requirements for the Post-Closure Care Estimates are found in LAC 33:V.3709. Also listed below are additional items to address in the cost estimates.

Does the post-closure cost estimate provide:

- 1) cost estimates in current dollar values?
- 2) cost estimates multiplied by 30 to cover the entire post-closure period?
- 3) detailed assumptions of cost based on post-closure care by a third party?
- 4) detailed assumptions of cost for all post-closure maintenance and monitoring activities?
- 5) detailed current labor costs?
- 6) detailed equipment maintenance and decontamination costs?
- 7) detailed post-closure certification costs?
- 8) detailed costs for notice to land authority and deed notation?
- 9) sufficient contingency cost?
- 10) annual adjustment for inflation?

#### Attachment C Post-Closure Fiancial Assurance

The requirements for the Post-Closure Financial Assurance are found in LAC 33:V.3711, 3713 and 3715. Any documents supporting this information are be included with information addressing these requirements. Also include any applicable certificates of insurance.

....

#### Attachment D Waste Analysis Plan

The requirement for a waste analysis plan is to allow for proper classification of any off-site disposal of leachate collected for the closed unit. If the leachate is to be treated and disposed on-site, the plan must identify all hazardous constituents present in the leachate and levels of treatment.

#### Attachment E Groundwater Monitoring Plan

#### Attachment F Corrective Action Plan

#### Attachment G Monitoring Well Locations

These attachments are to provide data to support and satisfy all ground water monitoring requirements of LAC 33:V.Chapter 33.

#### Attachment H Contingency Plan

This attachment is required to provide a step-by-step plan covering activities should a release, or spill, occur during the onsite handling of the leachate prior to treatment or disposal in accordance with LAC 33:V.1117 (40 CFR 265.52(a)).

#### Attachment I Personnel Training Plan

All detailed information and procedures for training of personnel providing the actual post-closure monitoring and maintenance is to be presented in this attachment in accordance with LAC 33:V.1515 (40 CFR 265.16(d)).

#### Attachment J Inspection Schedule

All inspection schedules and forms related to post-closure, along with any detailed instructions are to be placed in this attachment in accordance with LAC 33:V.517.G., 1509.B.

#### Attachment K Operating Record

#### 1. Facility Operating Record

- a. The Permittee shall maintain at the facility until the end of the postclosure care period, a written record of waste, soil, decontamination wash water, and ground water analyses. The following information shall be recorded:
- (i) The dates, exact place, and times of sampling or measurements;
- (ii) The individual who performed the sampling or measurements;
- (iii) The dates analyses were performed:
- (iv) The individuals who performed the analyses;
- (v) The analytical techniques or methods used; and
- (vi) The results of such analyses.
  - b. The Permittee shall maintain at this facility until the end of the post-closure care period, a written record of waste disposal activities. The following information shall be recorded:
- (i) Waste description;
- (ii) Disposal date;
- (iii) Quantity disposed;
- (iv) Disposal location
  - c. The Permittee shall keep at the facility a written record of all inspections conducted in accordance with Permit Attachment J. These records shall be maintained for a minimum period of three (3) years from the date of the last action taken as a result of the inspection.
  - d. The Permittee shall keep at the facility, training documents and records as required by LAC 33:V.1515. Records of training shall be kept on all current employees and for three (3) years after an employee leaves the facility unless transferred within the company. Training records of transferred employees will be handled in accordance with company policy.

- e. The Permittee shall maintain at the facility, a copy of all annual reports submitted in accordance with LAC 33:V.1529.D. These copies shall be kept until the end of the post-closure care period.
- f. The contact person for the Permittee during the post-closure care period will keep a record of all inspections, repairs, sampling, analysis results, and post-closure cost estimates: The record shall also contain the determination of significant increase calculations for the monitoring data and the annual determination of ground water flow rate and direction.

Document No. EF891219 EH&A Job No. 6612

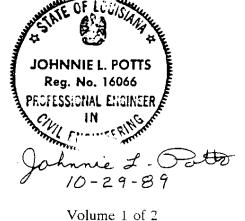


POST-CLOSURE CARE AND MONITORING PLAN FOR LANDFILL CELL 717

Prepared for: Rollins Environmental Services (LA), Inc. Baton Rouge, Louisiana

Prepared by: Espey, Huston & Associates, Inc. 888 West Belt South Houston, Texas 77042

October 1989



#### POST-CLOSURE CARE AND MONITORING PLAN FOR LANDFILL CELL 717

#### Table of Contents

Section		rage
INTRODUCTION		1
	List of Attachments	
	D. C. Cl. N.	
Attachment A;	Post-Closure Plan	
Attachment B;	Post-Closure Cost Estimates	
Attachment C;	Post-Closure Financial Assurance	
Attachment D;	Waste Analysis Plan	
Attachment E;	Groundwater Monitoring Plan	
Attachment F;	Corrective Action Plan	
Attachment G;	Monitoring Well Locations	
Attachment H;	Contingency Plan	
Attachment I;	Personnel Training Plan	
Attachment J;	Inspection Schedule	
Attachment K;	Operating Record	
Attachment L;	Landfill Cell 717 Closure and Post-Closure Care Plan	

NOTE: Attachments A through H are located in Volume 1 of 2 and Attachments I through L are located in Volume 2 of 2.

#### INTRODUCTION

Rollins Environmental Services (LA), Inc. (RES(LA)) has prepared a Post-Closure Care and Monitoring Plan for Landfill Cell 717 in order to comply with the requirements of 40 CFR Part 270.1. The EPA Hazardous Waste Permit Program requires that all facilities which close a hazardous waste management unit must have an approved Post-Closure Permit covering, if applicable, the maintenance and care of that unit during the post-closure period of thirty (30) years.

The Post-Closure Care and Monitoring Plan has been prepared to comply with the requirements of the Louisiana Administrative Code (LAC) 33:V. Chapters 4344 through 4395 and 4405 through 4413, and appropriate Federal Regulations.

The required information is presented in Attachments A through L in accordance with recommendations (guidance document) prepared by the Louisiana Department of Environmental Quality - Hazardous Waste Division (LDEQ).

The information contained in this submitted has been previously submitted to DEQ in either of the following submittals:

- Revised Facility Closure and Post-Closure Plan submitted to LDEQ on May 23, 1989.
- Part II Permit Application.

RES(LA) is currently in the process of closing Landfill Cell 717. The closure of Cell 717 was authorized under Permit No. LAD 010 395 127-CP4.

ATTACHMENT A
POST-CLOSURE PLAN

# ATTACHMENT A

# POST-CLOSURE PLAN

# Table of Contents

PURP	OSE	1
PERSO	ONNEL	1
A.	Closure Coordinator	1
B.	Closure Engineer	1
C.	Maintenance/Operations Supervisor	1
D.	Facility Contact	2
POST-	CLOSURE PLAN OVERVIEW	2
POST-	CLOSURE ACTIVITIES	3
A.	Inspections	3
B.	Security	4
C.	Maintenance of Final Cover	
D.	Maintenance of Stormwater Controls	5
E.	Maintenance of Surveyed Benchmarks	5
F.	Maintenance and Monitoring the Leachate Collection Systems	5
G.	Maintenance and Monitoring of the Groundwater Monitoring Systems	5
	PERSO A. B. C. D. POST- A. B. C. D. E. F.	PERSONNEL  A. Closure Coordinator B. Closure Engineer C. Maintenance/Operations Supervisor D. Facility Contact  POST-CLOSURE PLAN OVERVIEW  POST-CLOSURE ACTIVITIES  A. Inspections B. Security C. Maintenance of Final Cover D. Maintenance of Stormwater Controls E. Maintenance of Surveyed Benchmarks F. Maintenance and Monitoring the Leachate Collection Systems

#### POST-CLOSURE PLAN

#### I. PURPOSE

The purpose of this Post-Closure Plan for RES(LA) is to provide maintenance and monitoring of closed RES(LA) Landfill Cell 717 in an environmentally sound and technically feasible manner, in accordance with applicable State of Louisiana and Federal regulations pertaining to post-closure care of hazardous waste disposal facilities. The plan briefly discusses the personnel involved in administering post-closure care followed by a detailed discussion of post-closure care procedures.

#### II. PERSONNEL

Following closure of the entire facility, staffing at the RES(LA) facility will be kept at a minimum. Personnel who will be involved in post-closure activities are identified and the responsibilities of each are discussed below.

#### A. <u>Closure Coordinator</u>

The Closure Coordinator will be responsible for administering the post-closure plan following the completion of closure activities. He will supervise all post-closure care activities including inspections, maintenance of cover system, operation of the leachate collection and removal system, and operation of the groundwater monitoring system. The Closure Coordinator is responsible for keeping the post-closure plan up to date and for serving as a liaison between RES(LA) and regulatory agencies throughout the post-closure care period. The Closure Coordinator will also oversee the post-closure use of the RES(LA) property to ensure compliance with Chapter 35 of the Louisiana Administrative Code, Title 33, Part V(LAC33:V35).

#### B. Closure Engineer

The Closure Engineer will be responsible for supervising any maintenance performed on the cover system, the leachate collection and removal system, and the groundwater monitoring system. He will inspect any repairs performed on cover systems to ensure the integrity of the cover is maintained.

#### C. Maintenance/Operations Supervisor

The Maintenance/Operations Supervisor is responsible for conducting all post-closure care activities. He is in charge of all post-closure inspections, security, maintenance, monitoring, operations and repairs. The Maintenance/Operation Supervisor will inspect the facility on a routine basis, perform repairs and maintenance as necessary on cover systems or facility equipment, and operate the leachate collection and wastewater treatment systems and the groundwater monitoring system. He is responsible for ensuring all post-closure care activities are performed in accordance with the approved post-closure plan and in accordance with all appropriate State and Federal regulations. The Maintenance/Operations Supervisor reports directly to the Closure Coordinator.

#### D. Facility Contact

The facility contact during the post-closure care period is an follows:

Closure Coordinator RES(LA), Inc. P.O. Box 74137 Baton Rouge, LA 70807-4137 (504) 778-1234

#### III. POST-CLOSURE PLAN OVERVIEW

Most of the post-closure care activities will represent a continuation of standard RES(LA) operational practices throughout the post-closure care period. The design of the cover system for RES(LA) Landfill Cell 717 minimizes the need to maintain a stormwater control system as the cover is constructed to minimize erosion from surface water runoff and to divert runon. The leachate collection and treatment systems currently operate to remove and treat leachate from the landfill. The collection and treatment systems will continue to operate throughout the post-closure care period. The existing groundwater monitoring system will continue to operate throughout the post-closure care period unless results of the groundwater monitoring data indicate the need to establish a different groundwater monitoring program.

The post-closure care period is anticipated to continue for 30 years following final closure of the RES(LA) Landfill Cell 717 in accordance with LAC 33:V.4389. However, the LDEQ may reduce the post-closure care period if leachate or groundwater monitoring results, waste characterization work, application of advanced technology or alternate disposal, treatment or recovery techniques indicate that the facility is secure and the reduced period is sufficient to protect human health and the environment.

Post-closure use of the RES(LA) site will not disturb the integrity of the final cover or containment system as required by LAC 33:V.4389.D, unless the administrative authority finds that the disturbance is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment, or is necessary to reduce a threat to human health or the environment.

The post-closure activities described in this plan have been developed in accordance with LAC 33:V.4301. The plan provides a description of the planned monitoring activities and frequency with which they will be performed to comply with Subchapter E and Subchapter M of Chapter 43 of the Louisiana Administrative Code, Title 33, during the post-closure care period. The plan also includes a description of the planned maintenance activities and frequency with which they will be performed to ensure the integrity of the cap, final cover and other containment systems in accordance with the requirements of Subchapter M. Procedures, which RES(LA) will follow when amending or modifying the post-closure plan are contained in LAC 33:V.3523.

The Closure Coordinator will have prepared by a professional land surveyor a certified plat for the site, showing the locations and dimensions of RES(LA) Landfill Cell 717 where hazardous wastes are left on the site. The locations and dimensions will be relative to permanently surveyed benchmarks. Along with the plat, the Closure Coordinator will prepare from the site RCRA operating records, a waste inventory summarizing the general types and quantities of waste and their location on the site at closure.

The plat will contain a prominently displayed note stating the owner's or operator's obligation to restrict disturbance of the site as specified in LAC33:V.4389. Copies of the plat and the inventory will be provided to the LDEQ and will be entered into the East Baton Rouge Parish land records. RES(LA) will submit signed certification to LDEQ that the notice to the land authority and notice to the deed has been done in accordance with the LAC 33V.3525. These will also be made available to any future purchaser, lessee, or other user of the property within 90 days after Phase One closure is completed. A notation to the effect that the land has been used to manage hazardous waste and that its use is restricted under LAC 33.V:4389, will be permanently placed on the deed to the facility property or on some other instrument which is normally examined during a title search.

At the conclusion of the post-closure care period, RES(LA) will provide certification by an independent, registered, professional engineer that all activities and requirements of post-closure have been performed according to the approved post-closure plan.

#### IV. POST-CLOSURE ACTIVITIES

The post-closure plan is designed to comply with post-closure requirements contained in LAC 33:V.4389 through 4395 through Chapter 43 of LAC 33:V, including maintenance and monitoring throughout the post-closure care period. Additionally, the post-closure plan is designed to satisfy the post-closure care requirements for landfills under Subchapter M of Chapter 43 of LAC 33:V. Post-closure responsibilities include facility inspections, site security, maintenance of final cover, maintenance of stormwater controls, maintenance of surveyed benchmarks, operation of the leachate collection and removal system, and maintenance and monitoring of the groundwater monitoring system in accordance with the provisions of Subchapter E of Chapter 43 of LAC 33:V.

#### A. Inspections

RES(LA) will conduct quarterly inspections of the site to determine the need for and required extent of maintenance or other corrective measures. Emergency inspections will also be performed by the on-site treatment plant operator when there has been more than 5 inches of rainfall in a 24-hr period. The inspections will be conducted by an employee or agent of RES(LA) and will include a walk over and visual inspection of cover systems in and adjacent to the RES(LA) Landfill Cell 717 area, security fencing and devices, the leachate collection and treatment system, the groundwater monitoring system and the stormwater control system. Cover systems will be inspected for evidence of erosion or washout, seepage, burrowing animals, growth of vegetation other than shallow rooted grass and any other circumstance impacting the integrity of the final cover. Inspections will be conducted on the security systems to identify holes or breaks in the chain link or barbed wire fences, to test the condition of gates and locking devices and to assess the condition of perimeter warning signs. The leachate collection and treatment system will be inspected for breaks, clogs or leaks in the leachate extraction and removal standpipes, the main leachate extraction pipe and the piping to the wastewater treatment system. Leachate extraction pumps and all treatment systems components will be inspected for signs of wear or operational malfunctions. The groundwater monitoring system will be inspected for signs of casing failure or tampering through visual examination of each monitoring well. Perimeter levees, dikes and interior drainage ditches and runoff control structures will be inspected to ensure that adequate control of on-site drainage exists. Completed inspection forms will be submitted to the Closure Coordinator who will recommend and schedule maintenance on those items requiring attention.

#### B. Security

Although no wastes will remain exposed after completion of closure activities, access to the site by the public or by domestic livestock will be restricted by perimeter fencing and warning signs. Security devices will be maintained to prevent unauthorized entry to the facility during the post-closure care period. These measures should satisfy the requirements of LAC 33:V.4389.

### C. Maintenance of Final Cover

The integrity of the final cover system over the closed RES(LA) Landfill Cell 717 will be maintained throughout the post-closure care period through a comprehensive inspection and maintenance program. To maintain the ground cover vegetation, the area will be mowed twice yearly and fertilized every ten years. The mowing schedule should prevent the growth of weeds and brush species thus protecting the integrity of the cover system.

The topographic contours in the closed disposal area will be surveyed every 10 years during the post-closure period. Repairs to the cover system will be performed as necessary based on the results of the quarterly inspections and surveys. All cover system damage will be repaired generally within a period of one month following this discovery. Repairs will be carried out to bring all lines and grades to a match with their undamaged surroundings. Where repeated damage shows a problem with the original design, appropriate steps such as those below, will be taken to permanently correct the situation. As necessary, repairs would include reducing the pitch of the slope, construction of berms, protection of slopes and channels by riprap and the use of special energy dissipaters such as check dams. Should any of the above repairs need to be conducted at a time of year when reseeding of the vegetative cover is impractical, the repaired top soil covers would be mechanically protected through the use of geotextiles, matting, mulch, hay bales, etc. until reseeding is accomplished and the new growth is firmly established.

Damage to the vegetative cover will be repaired as necessary by reseeding at the proper times of the year. Protection of top soil will be accomplished as above until reseeding can be accomplished. Following reseeding, inspections of reseeded areas will be conducted by the treatment plant operator until the vegetation is restored to its original condition. Protection of reseeded areas will be accomplished as above until the growth is firmly established. Where repeated damage shows a problem with the original design, alterations to the type of groundcover or its fertilization frequency may be implemented.

If any surface irregularities in the cap shape or contour are found, they will be investigated immediately upon discovery to determine if any damage has been done to the impermeable layers of the cap. If these layers have been breached, repairs will be made as soon as practically possible. The investigation will also determine whether the impermeable layer still has the required slope for free drainage through the flow zone, when present, in order to ensure that liquids do not puddle and collect on this layer. If necessary, this slope will be restored within a period not exceeding one month following the discovery. Repairs will also include restoration of the flow zone (where present), top soil and vegetation as necessary.

#### D. Maintenance of Stormwater Controls

The control of runoff and runon in the closed RES(LA) Landfill Cell 717 area is an integral part of the design of the final cover system. By maintaining the original grade of the cover system (i.e., 2% maximum slope gradually away from the center of the disposal area), erosion or scouring of the cover system by stormwater flow is minimized. The maintenance of these slopes is included in maintenance of the final cover system. The interior drainage system of RES(LA) Landfill Cell 717 is used to control the flow of stormwater runoff. There is little reason to expect blockage of the runoff channels but if such an event did occur the blockage could be readily removed manually, or by the use of a backhoe available on site or from numerous rental agencies in the area. Inspection of the drainage channels is included in each inspection.

#### E. Maintenance of Surveyed Benchmarks

Benchmarks used as reference for the survey plat identifying the location and dimension of RES(LA) Landfill Cell 717 will be permanently surveyed benchmarks used in performing conventional surveying. These benchmarks will be examined during each inspection and the condition noted. If the condition of the benchmark is poor it will be replaced with another suitable marker and an appropriate notation made in the survey plat.

#### F. Maintenance and Monitoring the Leachate Collection Systems

The leak detection system and leachate collection and removal system installed at RES(LA) Landfill Cell 717 will continue to operate throughout the post-closure period. The systems will be checked during each inspection for evidence of liquids. If liquids are present in the systems, RES(LA) will pump out the leachate to the leachate tank for storage and eventual treatment in the organic wastewater treatment facility for disposal.

#### G. Maintenance and Monitoring of the Groundwater Monitoring System

RES(LA) will maintain the groundwater monitoring system by ensuring that the groundwater monitoring equipment installed and operated is functional in accordance with requirements of Subchapter E of Chapter 43 of LAC 33:V. RES(LA) will examine the components of the groundwater monitoring system during each inspection throughout the post-closure care period for signs of wear and malfunction. The well casings will be visually inspected for signs of failure and contamination of the screened interval by surface water or groundwater. Repairs will be made to the system as required and in the event of irreparable casing failure, the well will be abandoned using approved abandonment techniques such as plugging the well to the surface with cement or other grout material. If, due to unforeseen circumstances, the number of operable monitoring wells decrease to the point at which the general groundwater monitoring requirements are no longer satisfied, additional wells will be installed until the program achieves compliance with these requirements.

The planned monitoring activities and frequencies at which they will be performed to comply with Subchapter E of Chapter 43 of LAC 33:V. during the post-closure care period is the same as in the current groundwater monitoring plan. The post-closure groundwater monitoring program will utilize the existing groundwater monitoring system to satisfy the general groundwater monitoring requirements specified in LAC33:V.4371 and 4373.

ATTACHMENT B
POST-CLOSURE COST ESTIMATES

# ATTACHMENT B

# POST-CLOSURE COST ESTIMATES

# Table of Contents

I.	PURPOSE	l
II.	COST ESTIMATES	1
	List of Exhibits	

Exhibit B-1 Post-Closure Cost Estimates

#### POST-CLOSURE COST ESTIMATES

#### I. PURPOSE

The purpose of this Post-Closure Cost Estimate for RES(LA) is to provide cost estimates for the maintenance and monitoring of closed RES(LA) Landfill Cell 717 in an environmentally sound and technically feasible manner, in accordance with applicable State of Louisiana and Federal regulations.

#### II. COST ESTIMATE

The Post-Closure Cost Estimate has been prepared in accordance with LAC 33:V.4405.

The Post-Closure Cost Estimate will be revised whenever the RES(LA) facility or operations change in a manner which affects the post-closure cost, new information becomes available which could affect the post-closure cost or regulations are promulgated, withdrawn or modified which could affect the post-closure cost for Landfill Cell 717.

The detailed Post-Closure Cost Estimate is provided in Exhibit B-1:

# EXHIBIT B-1 POST-CLOSURE COST ESTIMATES FOR LANDFILL CELL 717

#### POST CLOSURE COST ESTIMATES FOR CELL 717

ACTIVITY	DESCRIPTION	ANNUAL COST
SITE INSPECTIONS  Quarterly site inspections	Assume labor cost \$1,000 annually	\$1,000.00
SITE SECURITY Fence and sign maintenance	Assume parts and labor cost \$500 annually	500.00
MAINTENANCE FINAL COVERS  Mowing vegetative cover	Assume site will be mowed twice annually (estimated mowing cost	1,500.00
Fertilize final cover	of \$750 each time) Assume site will be fertilized every ten years (estimated cost	150.00
Survey disposal areas	of \$1,500 each time) Assume area surveyed every 10 years (estimated cost to survey of \$2,000 each time)	200.00
Miscellaneous repairs	Assume miscellaneous repairs will cost \$750 annually	750.00
MAINTAIN STORMWATER CONTROLS Clear drainage channels	Blocked channels will be cleared twice annually (estimated cost of \$250 each time)	500.00
MAINTAIN SURVEYED BENCHMARKS Replace benchmark	Assume one benchmark must be replaced during post closure period (estimated cost of \$1,000)	34.00
LEACHATE COLLECTION/TREATMENT Inspection of leak dectection and leachate collection and removal system	Assume labor cost \$4,000 annually	4,000.00
Treatment of leachate	Assume maximum of 4000 gallons leachate generated monthly, at	1,920.00
Treatment system overhead	treatment cost of \$0.04/gallon Assume annual system overhead is \$10,000 annually	10,000.00
Treatment system operation	System operator works 20 hr/wk  @ \$15/hr	15,600.00
Sludge disposal	Assume offsite disposal costs of \$1500 annually	1,500.00
Miscellaneous repairs	Assume miscellaneous repairs cost \$100 annually	100.00
Leachate Collection and Removal System (LCRS) sampling	23 risers in system will be sampled annually, sampling time of 1 hour for each riser @ \$15 hr.	345.00
Sample pickup charges for LCRS	Samples picked up for analyses, annually @ \$50 each time	50.00
Sample analysis for LCRS	Analysis of 4 composite samples for compliance monitoring parameter @ \$800/sample	3,200.00
Leak Detection System (LDS) sampling	3 risers in system will be sampled quarterly, sampling time of 1 hour for each riser @ \$15/hr.	180.00

# POST-CLOSURE COST ESTIMATES FOR CELL 717 (CONT'D)

Sample pickup charges for LDS	Samples picked up for analysis, quarterly  @ \$50 each time	200.00
Sample analysis for LDS	Analysis of compliance monitoring parameter @ \$800/sample	9.600.00
GROUNDWATER MONITORING		
Monitor well sampling	4 wells in compliance monitoring will be sampled biannually, sampling time of 1 hour for each well @ \$15/hr	120.00
Sample pickup charges	Samples picked up for analysis biannually @ \$50 each time	100.00
Sample analysis	Analyses of compliance monitoring parameters @ \$800/sample	6,400.00
Flow rate/direction	Analyses of flow rate and direction monitoring, assumed to cost \$50/well	400.00
Data analyses and report	Assume data analysis and report costs \$3000 annually	3,000.00
Miscellaneous repairs	Assume miscellaneous repairs cost \$200 annually	200.00
	ANNUAL POSTCLOSURE COST	\$61,549.00
	30-YEAR POST CLOSURE COST	\$1,846,470.00

#### NOTES:

- 1. All costs are based on October 1989 dollars and are based on RES(LA)'s experience.
- Inspections include site security system and final cover.
   Costs will be updated each year in accordance with LAC 33:V. 4405.

# ATTACHMENT C POST-CLOSURE FINANCIAL ASSURANCE

# ATTACHMENT C

# POST-CLOSURE FINANCIAL ASSURANCE

# Table of Contents

I.	PURPOSE	1
II.	FINANCIAL ASSURANCE	1
	List of Exhibits	
Evhil	it C.1 Financial Assurance Documentation	

#### POST-CLOSURE FINANCIAL ASSURANCE

#### I. PURPOSE

The purpose of this section is to provide documentation that RES(LA) has established adequate "Financial Assurance for Post-Closure Care" of Landfill Cell 717 in accordance with LAC 33:V.4407.

#### II. FINANCIAL ASSURANCE

RES(LA) intends to comply with the "Financial Assurance for Post-Closure Care", LAC 33:V.4407, by providing LDEQ with financial assurance in the form of letter of credit and trust fund, assuring LDEQ of sufficient funds during the post-closure care period for Landfill Cell 717. Post-closure cost estimates are provided in Attachment B. Financial assurance documentation is provided in Exhibit C-1.

# EXHIBIT C-1 FINANCIAL ASSURANCE DOCUMENTATION



May 19, 1989

Mr. Dennis Dustynski
Office of Solid and Hazardous Waste
Hazardous Waste Division
Department of Environmental Quality
P.O. Box 33307
Baton Rouge, LA 70804-4307

Dear Mr. Duszynski:

Enclosed please find a revised Exhibit A and Schedules A and B of the Trust Agreement between Continental Bank National Association and Rollins Environmental Services (LA), Inc. providing financial assurance for closure and post-closure care in the amount of \$5,550,500. This new, higher amount reflects closure activities which have occurred at the facility and other cost updates.

As you will note, financial assurance is being provided, in accordance with 33:V.3707.G and 3711.G, by multiple financial mechanisms. The existing letter of credit number 6540906 remains in effect, providing financial assurance in the amount of \$4,762,588, as evidenced by the enclosed Schedule B. Financial assurance for \$787,912, which is the balance of the up-dated closure and post-closure costs, is being provided by direct funding of the trust fund (in accordance with 33:V.3707.A and 3711.A) also as evidenced by the enclosed Schedule B.

Should you have any questions, please feel free to call me or the plant Environmental Affairs Manager, Michael Higgs.

Sincerely,

Thomas G. Bramlette

Vice President

TGB/MC/MH/dds

#### SCHEDULE A

This Schedule A is dated May 18, 1989 and is intended to be substituted for and become the Schedule A attached to the Trust Agreement by and between Rollins Environmental Services (LA) Inc. and Continental Bank, National Association entered into as of September 21, 1984.

#### IDENTIFICATION OF FACILITIES AND COST ESTIMATES (RE: SECTION 2)

- (A) LHW/EPA Identification Number: LAD010395127
- (B) Rollins Environmental Services (LA) Inc. 13351 Scenic Highway Baton Rouge, Louisiana 70807
- (C) The closure cost of this facility is estimated not to exceed \$5,550,500.00.

Attest: Luce Ci. January	ROLLINS ENVIRONMENTAL (LA) INC.	SERVICES
	Its: Secretary	(Seal)
 	CONTINENTAL BANK, NATASSOCIATION	NIONAL ()
Attest: A LEAL AS TO SEA	By: Amulla Its: Vice President	(Seal)

This Schedule B is dated May 18, 1989 and is intended to be substituted for and become the Schedule B attached to the Trust Agreement by and between Rollins Environmental Services (LA) Inc. and Continental Bank, National Association entered into as of September 21, 1984.

#### ESTABLISHMENT OF FUND (RE: SECTION 3)

Initial Funding (1)

\$1.00

- Funding as of May 18, 1989: (2)
  - (A) To cover closure costs required for newly designed landfill Cell 902 in Baton Rouge, Louisiana for Rollins Environmental Services (LA) Inc.

\$536,905.00

(B) To increase the existing financial assurance due to inflationary and other factors.

\$251,007.00

Stand-by Letter of Credit No. 6540906 dated October 23, 1987 of Continental Bank, National Association in the amount of \$4,762,588.00 issued to Louisiana Department of Environmental Quality, P. O. Box 44066, Baton Rouge, Louisiana 70804, as Beneficiary. (The original Letter of Credit is held by the Beneficiary.)

ROLLINS ENVIRONMENTAL SERVICES (LA) INC. Its:/Secretary

CONTINENTAL BANK, NATIONAL

ASSOCIATION

By:

This Exhibit A is dated May 18, 1989 and is intended to be substituted for and become the Exhibit A attached to the Trust Agreement by and between Rollins Environmental Services (LA) Inc. and Continental Bank, National Association entered into as of September 21, 1984.

All orders, requests and instructions by the Grantor to the Trustee shall be in writing, signed by any one (1) of the individuals designated below:

J. Carlisle Peet, III

Secretary

Franklin K. Willis

Chairman of the Board Chief Executive Officer

- ROLLINS ENVIRONMENTAL SERVICES (LA) INC.

> CONTINENTAL BANK, NATIONAL 45 ASSOCIATION



# RECEIVED SECOND BY CONTINENTAL BANK N. A. (Formerly MINESTRUMENT OF COLUMN N. A. (Formerly)

# TRUST DEPARTMENT

SECTION ALTERNAL SECTION AND AND TRUST OCCUPANT OF ORIGINAL )	CHICAGO. MAY 18, 1989
FROM: Rollins Environmental Se	ervices (LA), Inc.
Tesh in the groupt of \$787,912.	00, for deposit into Trust Account
No. 16 - 00192 - 7.	
· · · · · · · · · · · · · · · · · · ·	
	CONTINENTAL Bank, N.A.
NOT NEGOTIABLE	By: Mull, Jr., Vice President

ATTACHMENT D
WASTE ANALYSIS PLAN

# ATTACHMENT D

# WASTE ANALYSIS PLAN

# Table of Contents

1.	INTRODU	CTION 1
II.	ON-SITE S	SAMPLING AND ANALYSIS PROCEDURES
III.	QUALITY	ASSURANCE/QUALITY CONTROL PROGRAM 1
		List of Exhibits
Exhibit	D-1	Sampling and Analytical Methodology
Exhibit	D-2	Quality Assurance/Quality Control
Exhibit	D-3	TCLP Procedure
Exhibit	D-4	Table CCWE (40 CFR 268.41)

#### ATTACHMENT D

#### WASTE ANALYSIS PLAN

#### I. INTRODUCTION

This Waste Analysis Plan documents the sampling procedures, analytical methodology employed, and the Quality Assurance/Quality Control program that assures sound information has been developed for the safe post-closure care of RES(LA) Landfill Cell 717. The plan is composed of the following procedures and programs:

- . On-site Sampling Procedures are utilized as a checks and balances system to maintain safe and appropriate methods of treatment and/or disposal of wastes followed by RES(LA).
- Quality Assurance/Quality Control Program ensures that waste sampling and analysis is accurate, precise, and representative.

#### II. ON-SITE SAMPLING AND ANALYSIS PROCEDURES

There are currently 23 individual leachate collection wells located at various points throughout the RES(LA) Landfill Cell 717. Each well is equipped with a pump with individual sampling port. Sampling for each well occurs at this point. The wells then pass into a common header and the leachate is pumped into a collection tank.

Samples will be obtained from each well once a year. These samples will be analysed for volatile organic compounds using U.S. EPA and/or LDEQ approved techniques. These results are compiled and maintained in the RES(LA) files. Wastes will be sent to the wastewater treatment or to the incinerator for as long as it is operational.

#### III. QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

RES(LA) has established a comprehensive QA/QC Program to provide assurance that laboratory sampling and analyses are accurate, precise, complete, representative and comparable. Exhibit D-2, Quality Assurance/Quality Control, further details this program.

#### A. <u>Personnel</u>

RES(LA) Laboratory Department adheres to a policy of hiring well-educated, experienced personnel in order to maintain the high standards of excellence expected of their work. New hires receive extensive on-the-job training in sampling and analytical procedures and techniques. All employees are encouraged to continue their education by participating in a liberal Educational Reimbursement Program. New hires are initially assigned to the day shift in order to provide supervisory personnel the opportunity to closely scrutinize their abilities and to correct any problems prior to their assignment on rotating shifts.

#### B. Internal Programs

RES(LA) practices several internal procedures for the purpose of QA/QC. These procedures include:

- practicing uniform sampling techniques,
- . confirming accuracy in laboratory analyses using instrument calibration and maintenance,
- . thorough personnel training programs,
- following the Blank, Duplicate, Spike, and Standardization QA/QC procedures, as specified in EPA SW-846.

#### 1. Practicing Uniform Sampling Techniques

The sampling and analytical methods used by RES(LA) are either Standard Methods, EPA Methods or ASTM Methods. RES(LA) practices several other procedures which ensure the integrity of the sampling and analytical methods. These procedures include thorough personnel training in sampling techniques which yield a uniform sample indicative of the corresponding waste and the mixing of incoming compatible loads.

2. Confirmation of Laboratory Accuracy Using Instrument Calibration and Maintenance

As per EPA SW-846, analytical instruments are frequently calibrated in addition to routine preventative maintenance. The calibration procedures used for analyses are those recommended by the corresponding EPA method. Calibration standards are prepared from certified standard solutions or from the Standard Reference Materials.

#### 3. Personnel Training Programs

RES(LA) trains and supervises all new employees in laboratory equipment use. Each laboratory analyst is issued a Laboratory Procedures Manual and is trained on the analytical procedures detailed therein.

#### 4. EPA SW-846 QA/QC Procedures

In order to ensure the reliability of analytical data, Blank, Duplicate, and Spike analyses are run on a regular basis on all analytical procedures as specified in EPA SW-846. This data is utilized to verify the validity of the laboratory results.

#### C. External Programs

Since 1984, RES(LA) has participated in an external quality control program sponsored by the EPA. RES(LA) has contacted the Analytical Products Group, Inc. (not affiliated with RES(LA)) to provide unknown samples to RES(LA) on a quarterly basis for QA/QC purposes.

EXHIBIT D-1

SAMPLING AND ANALYTICAL METHODOLOGY

#### EXHIBIT I-1-5

# RES(LA) LABORATORY SAMPLING AND ANALYTICAL METHODOLOGY

#### Table of Contents

	Table of Contents
1.0	Sampling Methodology 1.1 Sampling methodology overview 1.1.1 Containers 1.1.2 Tanks 1.1.3 Waste Piles 1.1.4 Landfills and Lagoons 1.2 Random Sampling
2.0	Sampling Equipment 2.1 Introduction 2.2 Composite Liquid Waste Samples (Coliwasa) 2.3 Weighted Bottle 2.4 Dipper 2.5 Thief 2.6 Auger 2.7 Scoop and Shovel
3 <del>. 0</del>	Sample Containers
4.0	Analytical Laboratory Procedures SWP-4101 Ash Weight SWP-4102 BTU QA/QC SWP-4103 BTU SWP-4104 BTU,Scrub & Halogens SWP-4106 Flash Point Pensky-Martin SWP-4107 Flue Dust Ratio, Expansion Factor & Bulk Density SWP-4108 Organic Samples Ph SWP-4109 Paint Filter Test SWP-4110 pH of Soil SWP-4111 Physical Parameters Lab pH meter Calibration SWP-4112 Reactivity with Flue Dust SWP-4113 Specific Gravity - Liquids SWP-4114 Viscosity SWP-4115 & Water, % Oil, % Sludge SWP-4116 Density SWP-4117 Ignitability of Solid Material SWP-4118 Total Solids SWP-4119 BTU, Scrub & Halogens of Material Having Less Than 9,000 BTU SWP-4120 Ash Weight of Incineration Material SWP-4121 Compatibility SWP-4501 Wet Ash Digestion SWP-4503 Microwave Digestion SWP-4601 Polychlorinated Riphenyls in Transformers Fluid &

SWP-4601 Polychlorinated Biphenyls in Transformers Fluid & Waste Oil

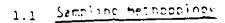
I-1-72

June 24, 1987

Exhibit I-1-5
Table of Contents
Page two of two

SWP-4701	Ash Testing Procedure
SWP-4702	Slurry Testing Procedure
SWP-4703	Surface Water Movement
SWP-4704	Rejecting a Load
SWP-4705	Caustic Concentrate Methodology
EPASW-6010	Lead
EPASW-7470/7471	Mercury

#### SAMPLING METHODOLOGY



The sampling methopology will be betermined in part by the sampling strategy to be employed. Four different types of sampling strategies (simple random, stratified random, systematic random, and authoritative sampling) were discussed in Section 1.1. The latter three strategies repulse more information than the simple random approach. This additional information must either be acquired through sampling or must be estimated. The informetion requirements of the sampling strategy to be used should be kept in mind when designing a sampling plan.

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed below, for sampling waste with properties similar to the indicated materials, will be considered by the Agency to be representative of the waste.

Extremely viscous liquid Erusned or powdered material ASTM Standard D346-75. Soil or rock-like material ASTM Standard DAZG-69 Soil-like material Fly-Esn-like material

ASTM Standard D140-701 ASTM Standard D1452-65 ASTM Standard D2234-76

#### 1.1.1 Containers

The term container as used here refers to receptables that are designed for transporting materials, e.c., crums and other smaller receptables as coposed to stationary tanks. (Stationary tanks are discussed in Section 1.4.2.) Weighter octiles, Coliwasas, orum thiefs, or triers are The sampling devices which are chosen for the sampling of containers.

The sampling strategy for containers varies according to (1) the number of containers to be sampled, and (2) access to the containers. ineally, of the waste is contained in several containers, every container will be sampled. If this is not possible oue to the large number of containers. or cost factors, a subset of incivioual containers must be randomly selected for sampling. This can be done by assigning each container a number and then randomly choosing a set of numbers for sampling.

Access to a container will affect the number of samples that can be taken from the container and the location within the tontainer from which samies can be taken. locally, several samiles should be taken from locations displaced both vertically and northeonolity throughout the waste. The number of samples required for reliable sampling will vary depending on the distribution of the waste components in the container. minimum with an unknown waste, a sufficient number and distribution of samples should be taken to appress any possible ventical anomalies in the

<sup>-</sup>ASTM Standards are available from ASTM, 1916 Race Street. Philadelphia, PA 19183.

# EXHIBIT 1-1-5

# SAMPLING AND ANALYTICAL METHODOLOGY

# Table of Contents

1.0	Sam	orrud Werry	odology	
	1.1	Sampling	Methodology Overview	
		1.1.1	Containers	
		1.1.2		
			Waste Piles	
		1.1.4	Landfills and Lagoons	
	1.2	Random Sa	ampling the second of the seco	
2.0	Sanç	oling Equip	ment	
	2.1	Introduct	ion	
	2.2	Composite	Liquid Waste Sampler (coliwasa)	
	2.2	Weighted	Bottle	
	2.4	Dipper		
		Thief		
		Auger		
	2.7	Scoop and	Shovel	
3.0	Samp	ple Containers		
4.0	Anal	ytical Met	hodology	
	4.1	Summary o	of Methods Used	
	4.2	Additiona	l Methods	
			Ballistic Bomb Calorimeter	
			Argentometric Method	
		4.2.3	Compatability	
			Viscosity	
			Expansion Factor, Density and Flue Ash Ratio For	
			Solidification	
		4.2.6	Determination of Reactivity of Kiln Dust or Flue Asi	
		4:2.7	Chemical Overen Demand	

nonrandomly heterogeneous in a vertical rather than a nonitontal direction one to (1) settling of solids and the denser phases of liquids, and (1) variation in the content of the waste as it entered the container. Dags, paper drums, and open-neaded steel drums (of which the entire top tan be removed) generally do not restrict access to the waste and therefore of not limit sampling.

when access to a container is unlimited, a useful strategy for obtaining a representative set of samples is a three-dimensional simple random sampling strategy in which the container is divided by constructing an imaginary three-dimensional grid (see Figure 1). This is done as follows. First, the top surface of the waste is divided into a grid whose sections either approximate the size of the sampling device or are larger than the sampling device if the container is large. (Cylindrical containers can be divided into imaginary concentric directs which are then further divided into grids of edual size.) had section is assigned a number. The height of the container is then divided into imaginary levels that are at least as large as the vertical space required by the chosen sampling device. These imaginary levels are then assigned numbers. Specific levels and grid locations are then selected for sampling using a random number table or random number generator.

Another appropriate sampling approach is the two-dimensional simple random sampling strategy, which can usually yield a more precise sampling when fewer samples are collected. This strategy involves (1) dividing the top surface of the waste into an imaginary grid as in the three-cimensional strategy, (2) selecting grid sections for sampling using random number tables or number generators, and (3) sampling each selected grid point in a vertical manner along the entire length from top to bottom using a sampling device such as a drum thief, or Coliwass.

Some containers such as prums with pump openings limit access to the contained waste and restrict sampling to a single vertical plane. Samples taken in this manner can be considered representative of the entire container only if the waste is known to be homogeneous. Precautions must be taken when sampling any type of steel grum since the grum may explode or expel gases and/or pressurized liquids. An EPA/NEIC manual, "Safety Manual for Hazardous waste Site Investigation," appresses these safety precautions.

# 1.1.2 <u>Tenks</u>

Tanks are essentially large containers. The considerations involved in sampling tanks are therefore similar to those for Sampling containers (Section 1.4.1). As with containers, the poal of sampling tanks is to account a sufficient number of samples from different locations within the waste to provide analytical data that are representative of the entire tank contents. The accessibility of the tank contents will affect the sampling methodology.

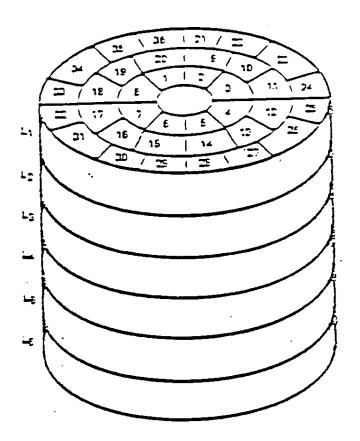


Figure 1. Comainer divided into an imaginary mise-dimensional grid.

If the tank is an over one, allowing unrestricted access, then usually a representative set of samples is pest obtained using the inner-chiensional simple random sampling strategy described in Section 1.4.1. This strategy involves dividing the tank contents into an inaginary three-chiensional pricary a first step, the top surface of the weste is divided into a pricards sections either approximate the size of the sampling device or are larger than the sampling device if the tank is large. (Cylindrical tanks can be divided into imaginary concentric direles which are then further divided into grids of edual size.) Lach section is assigned a number. The height of the tank is then divided into imaginary levels that are at least as large as the vertical space required by the chosen sampling device. These imaginary levels are assigned number, she then selected for sampling using a random number table or random number generator.

A less comprehensive sampling approach may be appropriate if information reparding the distribution of waste components is known or assumed (e.g., vertical compositing will yield a representative sample). In such cases, a two-cimensional simple random sampling strategy may be appropriate. In this strategy, the top surface of the waste is divided into an imaginary grid; prio sections are selected using random number tables or number generators; and each selected grid point is then sampled in a vertical manner along the sentire length from top to pottom using a sampling device such as a weighted or more discrete strata, a more precise representation of the tank contents can be obtained by using a stratified random sampling strategy, i.e., sampling each stratum separately using the two- or three-dimensional simple random sampling strategy.

Some tanks bermit only limited access to their contents, which restricts the locations within the tank from which samples can be taken. If sampling is restricted, the sampling strategy must, as a minimum, take sufficient samples to appress the potential vertical anomalies in the waste in proof to be considered representative. This is because contained wastes tend to display vertical, rather than horizontal, nonrandom neterogeneity due to settling of suspended solids or denser liquid phases. If access restricts sampling to a portion of the tank contents (e.g., in an open tank, the size of the tank may restrict sampling to the perimeter of the tank; in a closed tank, the only access to the waste may be through inspection ports), then the resulting analytical data will only be been representative of the accessed area, not of the entire tank contents unless the tank contents are known to be homogeneous.

If a limited access wank is to be sampled, and dittle is known about the distribution of components within the waste, a set of samples that are representative of the entire tank contents can be obtained by taking a series of samples as the tank contents are being prained. This should be done in a simple random manner by estimating how long it will take to drain the tank and then randomly selecting times outling prainage for sampling.

The most appropriate type of sampling nevice for tables depends on the table parameters. In general, shallow tables are sampled using subspices samplers (i.e., pond samplers), while weighted pottles are usually employed for table deeper than 5 ft. Dippers are useful for sampling pipe effluents.

## 1.1.3 Waste Piles

waste accessibility, which is frequently a function of pile size, is a key faction in the design of a sampling strategy for a waste pile. Ideally, pries containing unknown wastes should be sampled using a three-dimensional simple random sampling strategy. This strategy can be employed only if all points within the pile can be accessed. In such cases, the pile should be divided into a three-dimensional grid system, the grid sections assigned numbers, and the sampling points then chosen using random number talbes or number generators.

If sampling is limited to certain portions of the pile, then the collected sample will be representative only of those portions unless the waste is known to be nomogeneous.

In cases where the size of a pile impedes access to the waste, a set of samples that are representative of the entire pile can be obtained with a minimum of effort by scheduling sampling to coincide with pile removal. The number of truckloads needed to remove the pile should be estimated, and the truckloads randomly chosen for sampling.

The sampling devices most commonly used for small piles are thiefs, triers, and shovels. Excavation courpment such as packnoss can be useful for sampling medium-sized piles.

## 1.1.4 Lancfills and Lappons

Landfills contain primarily solid waste, while lapponed waste may range from liquids to dried sludge residues. Lapponed waste that is either liquid or semisolid is often best sampled using the methods recommended for large tanks (see Semion 1.4.2). Usually solid wastes contained in a landfill or lappon are pest sampled using the three-dimensional random sampling strategy.

Ins three-cimensional random sampling strategy involves establishing an imaginary three-cimensional pric of sampling points in the waste and then using random number tables or penerators to select points for sampling. In the case of landfills and lapoons, the pric is established using a survey or mad of the area. The mad is divided into 2 two-dimensional prics with sections of edual size. These sections are then assigned numbers secuentially.

Next, the depth to which sampling will take place is determined and supprovided into equal levels which are also sequentially numbered. (The lowest sampling depth will vary from landfill to landfill, usually, sampling extends to the interface of the fill and the natural soils. If soil contamination is suspected, sampling may extend into the natural soil.) The normalization is suspected, sampling coordinates are then selected using random number tables or generators. If some information is known about the nature of the waste, then a modified three-dimensional strategy may be more appropriate. For example, if the landfill consists of several cells, a more precise measurement may be obtained by considering each cell as a stratum and employing a stratified three-dimensional random sampling strategy (see Section 1.1).

Hollow stem augers comprised with split-spoon samplers are frequently appropriate for sampling landfills. Water-driven or water-rinsed coming equipment should not be used for sampling since the water can rinse chemical components from the sample. Excavation equipment such as backnoss may be useful in optaining samples at various depths; the resulting holes may be useful for viewing and recombing the contents of the landfill.

#### 1.2 Random Sampling

Steel drums, plastic drums and fiber paks must be inspected upon receipt, before the load may be accepted. An accurate count of the drums (whatever) must be made and entered on the Laboratory Discharge ticket. Also, each load must be weighed. Each container must be clearly labelled with the appropriate BR number; if not, the load is to be rejected. EPA waste code numbers are correlated into EPA hazardous codes so that a proper storing method may be implemented.

Drums and fiber paks for incineration must be randomly sampled. This random sampling must account for 20% of the containers. For thermalox, chemical and biochemical treatment, the sampling must account for 10% or greater.

#### RANDOM SAMPLING OF DRUMS AND FIBER/PAKS

Generally drums and fiber/paks are arrayed in columns & rows

1	5 9	13	17				57	61	٤5.	69
2	6 10	14	18				58	62	6 <b>6</b>	70
3	7 11	15	19	• • •	etc	• • •	59	63	67	71
Ŀ	8 12	16	20				60	64	68	72

Using any section of a random numbers table the containers to be sampled can be determined. From the adjacent section of a random numbers table the drums

					to be seen lad would be using aslume and 50 O/
				00	to be sampled would be, using column one, 59, 04,
	50				
			16		71 07 00 77 27 05 48 15 08 47 5 12 5-4
	19				31, 03, 08, 37, 22, 05, 48, 15, 09, 43 for 12 out
			U9		
31	71	<b>03</b>	53	38	
					of 72 drums. Alternatively, the sample numbers
03	70	~~	67	59	
OΕ	45 80	79	46	80	
37	80	05	75	64	could be obtained by starting at column three,
90	63	56	G9	37	•
	69	38	02	88	
					35, 60, 44, 03, 22, 05, 56, 38, 69, 53, 37, 09
05	79	69	67	64	
25	91	53	กัง	27	·— ·
	64	C	===	25	er at column four,
	23				at action, but,
	بد 21				
ÚУ	<b>8</b> 2	24	ψu	טה	50, 16, 33, 09, 53, 67, 46, 69, 02, 67, 03, 27
/3	C-7	00	02	76	20, 10, 22, 22, 27, 40, 40, 62, 62, 62, 22
43 31			60 60		·
					etc.
81	25	<b>42</b>	G2	84	ELL.
7.	95 63	Þυ	20	13	
		7 %	u .		

(See following sheet for table)

(See following sneet for table) 84 15 45 34 10 04 63 41 01 90 53 40 (8) 97 62 53 63 43 62 57 69 \$22 55 15 97 35 21 74 29 00 32 38 00 54 24 97 68 39 14 32 33 53 16 81 

#### SECTION 2.0

### SAMPLING EQUIPMENT

### 2.1 Introduction

Sampling the diverse types of RCRA regulated wastes requires a variety of different types of samplers. A number of such sampling devices are described in this section. While some of these samplers are commercially available, others will have to be fabricated by the user. Tables 2-1, 2 and 3 are general guidelines to the types of waste that can be sampled by each of the samplers described and the points of sampling.

TABLE 2-1
SAMPLING EQUIPMENT FOR PARTICULAR WASTE TYPES

Samplina	1	l	<u> </u>	1	ſ		1	I	1
Point		Sacks	Open Bed	Closed   Bed	Storage     Tanks		Ponds,		   P≤pe
Waste		Bags	Truck		or Bins	Piles	6 Pits		, . <u>.</u> .
_2426	<u>i</u>	<u> </u>	<u> </u>		1	_	1		İ
Pree Pree	  -   Coli-   wasa 	     K/A   	N/A	   Coli-   Wasa	  -   Weighted   Bottle   	N/A	     Dipper   		  Dip-  per
Sludges	  Trier 	1     N/A   	Trier	     Trier   	   Trier 	А/А	1 1 1 1	     K/A 	     n/a 
Moist Ters Granules	I	   Trier 	Trier	Trier	   Trier 	Trier	Trier	  Shove	
Dry Powders or Granules	1	Thief	Thief	Thief	Inief     Inief   	Thief	   Thief 	  Shovel	
Sand or Packed Powders and Granules	! [	ArgeT	Auger	Auger				K/4	
Large Grained Solids	erze Trier	Erge	Large   Trier	Large Trier	Large   Trier	Lize Tier	Lerge Trier	large Tries	
	1	<u> </u>	1		!		!	· · · · · · · · · · · · · · · · · · ·	

# RECOMMENDED SAMPLER SELECTION AND SAMPLE NUMBER

D	Waste Type	Sampler	No. of Samples	Limitations
	Liquids, sludges, and slurries in	Coliwasa	1	Not for containers > 1.5 m deep.
	drums, vacuum trucks, barrels, and similar containers	a) Plastic	1	Not for wastes containing ketones, nitrobenzene, dimethylformamide, mesityl oxide, or tetrahydrofuran.
		b) Glass	1	Not for wastes containing hydrofluoric acid and concentrated alkali solutions.
	Liquids and sludges in ponds, pits, or lagoons	Pond sampler (	l composite (surface, mid- dle, near bottom)	Cannot be used to collect samples beyond 3.5 m. Dip and retrieve sampler slowly to avoid bending the handle.
i i	Powdered or granular solids in bags, drums, barrels, and similar containers	a) Grain sampler	1 composite (3-5 points)	Limited application for sampling moist and sticky solids and when the diameter of the solids is greater than 0.6 cm.
		b) Sample trier	(3-5 points)	May incur difficulty in retaining core sample of very dry granular materials during sampling.
	Dry wastes in shallow con- tainers and suface soil	Trowel or Ma scoop	y composite	Not applicable to sampling deeper than 8 cm. Difficult to obtain reproducible mass of samples.
	Waste piles	Waste pile <sub>Ma</sub> sampler		Not applicable to sampling solid wastes with dimensions greater than 4 the diameter of the sampling tube.
	Soil deeper than 8 cm	a) Soil auger	1	Does not collect undisturbed core sample.
				Difficult to use on stony or rocky or very wet soil.
_	Wastes in storage tanks	Weighted bottle sampl		May be difficult to use on very viscous liquids.
			near bottom)	·

I-1-86 June 24, 1987

### TABLE 2-3

### SAMPLING POINTS FOR WASTE CONTAINERS

_				٠				
, -	_		-	٠		•	_	_
ι.	on	1	м	1		1	_	T
~			•	٠	•		•	•
			_					_

## Sampling Point

	<del></del>
Drum, bung on one end*	Withdraw sample through the bung opening.
Drum, bung on side*	Lay drum on side with bung up. Withdraw sample through the bung opening.
Barrel, fiberdrum, buckets, sacks, bags	Withdraw samples through the top of barrel, fiber-drums, buckets, and similar containers. Withdraw samples through fill openings of bags and sacks. Sample through the center of the containers and to different points diagonally opposite the point of entry.
Vacuum truck and similar containers	Withdraw sample through open hatch. Sample all other hatches.
Pond, pit, or lagoon	Divide surface area into an imaginary grid. Take three samples if possible; one at the surface, one at mid-depth, and one near the bottom. Repeat the sampling at each grid over the entire pond or site.
Waste pile	Withdraw samples through at least three different points near the top of the pile to points diagonally opposite the point of entry.
Storage tank	Sample from the top through the sampling hole. Withdraw three samples; one at the top, one at middepth, and one near the bottom.
Soil	Divide the surface area into an imaginary grid. a Sample each grid.

THE EPA STATES THAT DRUMS ARE NOT TO BE OPENED EXCEPT BY REMOTE DEVICES.

The number of grids is determined by the desired number of samples to be collected which when combined should give a representative sample of the wastes.



## Score and Purpose

The Colivasa is a device employed to sample free flowing liquids and slurries contained in drums, shallow open top tanks, pits and similar containers. It is especially useful in sampling wastes which consist of a number of immiscible liquid phases.

The Colivasa consists of a glass, plastic, or metal tube equipped with an end closure which can be opened and closed while the tube is submerged in the naterial to be sampled.

The Coliwasa was developed by the California Department of Health under a grant from the U.S. TPA and their report, uplets and Sampling Procedures for Hazardous Waste Streams?



## General Comments and Precautions

- 1. Do not use a plastic Coliswasa to sample wastes containing organic materials.
- 2. Do not use a glass Colivasa to sample liquids that contain hydrofluoric acid.
- semple of this solid phase.

## pps:stus

Colivasas are not available commercially and must be fabricated to conform to the specifications detailed in Figure 2.2-1 Table 2.2-1 lists the parts required to fabricate a plastic or glass Colivasa.

Table 2.2-1
PARTS FOR CONSTRUCTING A COLIWASA

:::*	Item	Comments	Supplier
		Plastic	Plastic
	PVC plastic, 4.13 cm	Colivasa	supply
	I.D. x 1.52 m long	only	houses
	x 0.4 cm wall thickness		
		Glass	Corning
	glass, 4.13 cm I.D. x	Colivasa	Glass Works
<del></del>	1 1.52 m long	0217	#72-1602
		· 1.	Laboratory
	·	i	supply house
	· · · · · · · · · · · · · · · · · · ·		
	Stopper roc, PVC, 0.95 cm	Plastic	Plastic
	O.D. x 1.67 m long		suppl∀
		0227	ponsee
		1	
	Stopper rod, teflor,	Glass or	Plastic
	0.95 cm 0.D. m 1.67 m long	Plastic	supply
		Colivasa	houses
	1 topical bines BEC 2 con 1	Tabricate by	Plestic
	Locking block, PVC, 3.8 cm     O.D. x 10.2 cm long with		
	0.56 cm hole in cerrer	0.56 cm hole	supply bouses
	i chap ch note th center i		DOGRES
		rarougn certer	
		EEZ-E-	
	locking block sleeve, PVC	Proficate	Plastic
	1 4.13 cm 1.D. x 6.25 cm	from stock	\$2pply
• •	1 1025	4.13 cm PVC	houses
	i	ກລ່ວຍ	<del>-</del> <del>-</del>
<del> </del>	I	1	
	T-handle, aluminum, 18 cm	Pabricate	Estivate
•	long x 2.86 on wide with	from eluminum/	SIDTES
	1 1.27 on wide channel	ber stock	

:::+	i:en	Comments	Supplier
1	Swivel, aluminum bar   1.27 cm square x 5.08 cm   long with 3/8" NC inside   thread to attach stopper   rod	Fabricate -   from aluminum   bar stock	·
1	Nut, PTC, 3/8" NC	]	Plastic supplier
1	Washer, PVC, 3/87 NC		Plastic supplier
1	Nut, stainless steel,   2/67 NC	] ]. ]	fiardware stores
1	Washer, stainless steel,   3/87		Rardware stores
1	Bolt, 3.12 cm long x 3/16 NC	1	Eardware stores
A			Eardware stores
	Washet, lock 3/16"	 	Eardware

## erembly

ssemble sampler as follows:

- Artach swivel to the T-handle with the 3.12cm long bolt and secure with the 3/16° NC washer and lock nut.
  - Shape stopper into a cone by boring a 0.95 cm hole through the center of the stopper. Insert a short piece of 0.95 cm 0.D. handle through the hole until the end of the handle is flush against the bottom (smaller diameter) surface of the stopper. Carefully and uniformly turn the stopper into a cone against a grinding wheel. This is done by turning the stopper with the handle and grinding it down conically from about 0.5 cm of the top (larger diameter) surface to the edge of the 0.95 cm hole on the bottom surface. Attach neopreme stopper to one end of the stopper rod and secure with the 3/87 NC washer and lock nut.
- . Install the stopper and stopper rod assembly in the sampling tube.
- .. Secure locking block sleeve on the block with glue of screws.
- Position the locking block on top of the sampling tube so that the sleeveless portion of the block fits inside the tube, the sleeve sits against the top end of the tube, and the upper end of the stopper rod slips through the center hole of the block.
  - Attach the upper end of the stopper to the swivel of the T-handle.

- Flace the sampler in the closed position and adjust the tension on the stopper by screwing the T-handle in or out.
- R. Test the tension by filling the Colivasa with water to insure it is leak free.

- 1. Clean Colivasa.
- 2. Adjust sampler's locking mechanism to insure that the stopper provides a right closure. Open sampler by placing stopper rod handle in the I-position and pushing the rod down until the handle sits against the sampler's locking block.
- 3. Slowly lower the sampler into the waste at a rate which permits the level of liquid inside and outside the sampler to remain the same. If the level of waste in the sampler
- tube is lower inside than outside, the sampling rate is too fast and will produce a non-representative sample.
- 4. When the sampler hits the bottom of the waste container, push sampler tube down to close and lock the stopper by turning the T-handle until it is upright and one end tests on the locking block.
- 5. Withdraw Colivasa from waste and wipe the outside with a disposable cloth or rag.
- 6. Place sample tube at mouth of a container and discharge sample by slowly opening the sampler.

- place the sampler in the closed position and adjust the tension on the stopper by screwing the T-handle in or out.
- R. Test the tension by filling the Colivasa with water to insure it is leak free.

- 1. Clean Colivasa.
- 2. Adjust sampler's locking mechanism to insure that the stopper provides a tight closure. Open sampler by placing stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
- 3. Slowly lower the sampler into the waste at a face which permits the level of liquid inside and outside the sampler to remain the same. If the level of waste in the sampler tube is lower inside than outside, the sampling face is too fast and will produce a non-representative sample.
- 4. When the sampler hits the bottom of the waste container, push sampler tube down to close and lock the stopper by turning the T-handle until it is upright and one end rests on the locking block.
- Withdraw Colivasa from waste and wipe the outside with a disposable cloth or ray.
- 6. Place sample tube at mouth of a container and discharge sample by slowly opening the sampler.



## Score and Anniication

The sampler consists of a plass or plastic bottle, sinker, stopper and a line which is used to lower and raise the bottle and to open the bottle. A weighted bottle samples liquids and free flowing slurries.

# General Comments and Precautions

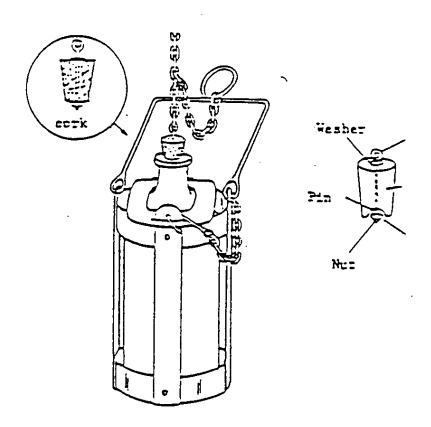
- 1. Do not use a plastic bottle to sample wastes containing organic materials.
- 2. Do not use a glass bottle to sample wastes that contain hydrofluoric acid.
- 3. Before sampling insure that the waste will not corrode the sinker, bottle holder or line.

# Deretus

A weighted bottle with line is built to the specifications in ASTM Methods D 170 and E 300 (Pigure 2.3-1).

- Clean bottle.
- Assemble weighted bottle sampler.
- Lower the sampler to directed depth and pull out the bottle stopper by jerking the line.
- 4. Allow bottle to fill completely as evidenced by dessation of air bubbles.
- 5. Raise sampler, cap and wipe off with a disposable cloth. The bottle can serve as a sample container.





Pigure 2.3-1 Valend Bottle Sample

# ne and Annlication

The dipper consists of a glass or plastic beaker clamped to the end of a I or 3 piece relescoping aluminum or fiberglass pole which serves as the handle. A dipper samples liquids and free flowing slurries.

## General Compents and Precautions

- Do not use a plastic beaker to sample wastes containing organic materials.
- 2. Do not use a glass beaker to sample wastes of high pH or which contain hydrofluoric acid.
- 3. Paint aluminum pole and clamp with a 2 part epoxy or other chemical resistant paint when sampling either alkaline or acidic wastes.

#### Adderatus

Dippers are not available commercially and must be fabricated to confrom to the specifications detailed in Figure 2.4-1.

Table 2.4-1 lists the parts required to fabricate a dipper.

Table 2.4-1
PARTS FOR CONSTRUCTING A DIFPER

Ougitit	Itez	Suprlier
<u>:</u>	Adjustable clamp, 6.4 to 8.9 cm   (2 1/2 to 3 1/2") for 250 to   600 ml beakers. Heavy duty   Eluminum.	Laboratory supply bouses
1	Tube 2.5 to 4.5 meters long with joint can locking mechanism.    Diameter 2.54 cm ID and 3.18   cm ID.	Swimming pool supply houses

I-1-96 June 24, 1987

Ougriity	1 ::em	Supplier
1	Polypropylene or glass beaker, 1250 ml to 600 ml.	Laboratory supply houses
4	Bolts 2 1/4" x 1/4", KC	Bardware stores
4	Nuts, 1/4", NC	Eardware stores

- 1. Clean beaker, clamp, and handle.
- 1. Assemble dipper by bolting adjustable clamp to the pole-Place beaker in clamp and fasten shut.
- 3. Turn dipper so the mouth of the beaker faces down and insert into waste material. Turn beaker right side up when dipper is at desired depth. Allow beaker to fill completely as shown by the cessation of air bubbles.
- 4. Raise dipper and transfer sample to container.



Varigrip clamp

It holes

Telescoping signing pole

2 5 no / 5 nonno /P no of for

2.5 to 4.5 meters (8 to 15 ft)

. .

00 <u>= 1</u>

2.4-1

I-1-98 June 24, 1987

#### 2.5 Thief

## Scope and Appication

A thief consists of two slotted concentric tubes usually made of stainless steel or brass. The outer tube has a conical pointed tip which permits the sampler to penetrate the material being sampled. The inner tube is rotated to open and close the sampler. A thief is used to sample dry granules or powdered wastes whose particle diameter is less than 1/3 the width of the slots.

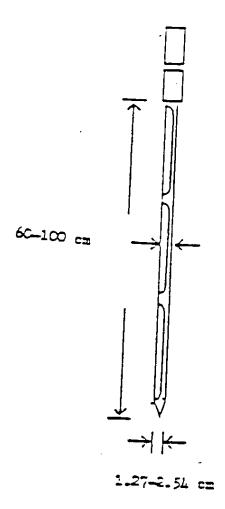
#### ADDETATUS

A thief is available at laboratory supply stores. (Pigure ,2.5-1).

## Procedure

- Cleen samplem.
- Insert closed thief into waste material. Rotate inner tube to open thief. Wiggle the unit to encourage material to flow into thief. Close thief and withdraw. Place sampler thief in a horizontal position with the slots facing upward. Remove inner tube from thief and transfer sample to a container.

I-1-99 June 24, 1987



Plane 2.5-1

I-1-100 June 24, 1987

#### 2.6 Auger

## Scope and Application

An auger consists of sharpened spiral blades attached to a hard metal central shaft. An auger samples hard or packed solid wastes or soil.

#### ADDATATUS

Augers are available at hardware and laboratory supply stores.

## Procedures

- 1. Clean sampler.
- l. Bore a hole through the middle of an aluminum pie pan large enough to allow the blade of the auger to pass through. The pan will be used to catch the sample brought to the surface by the auger.
- hole in the pan until the desired sampling depth is reached. Back off the auger and transfer the sample in the pan and adhering to the auger to a container. Spoon out the test of the loosened sample with a sample trier.

I-1-101 June 24, 1987

# cope and Application

Scoops and showels are used to sample granular or powdered naterial in bins, shallow containers and conveyor belts.

## Arparatus

Scoops are available at laboratory supply houses. Flat nosed shovels are available at hardware stores.

## Procedure

- 1. Clean samplet.
- 2. Obtain a full cross section of the waste material with the scoop or shovel large enough to contain the waste collected in one cross section sweep.

I-1-102 June 24, 1987 3.0

The most important factors to consider when choosing containers for hazardous waste samples are compatibility with the waste, cost, resistance to breakage, and volume. Containers must not distort, rupture, or leak as a result of chemical reactions with constituents of waste samples. Thus, it is important to have some idea of the properties and composition of the waste. The containers must have adequate wall thickness to withstand handling during sample collection and transport to the laboratory. Containers with wide mouths are desirable to facilitate transfer of samples from samplers containers. Also, the containers must be large enough to contain the required volume of sample or the entire volume of a sample contained in samplers.

Plastic and glass containers are generally used for collecting and storing of hazardous waste samples. Commonly available plastic containers are made of high-density or linear polyethylene (LPE), conventional polyethylene, polympropylene, polycarbonate, taflon FTP (flourinated ethylene propylene), polyvinyl chloride (PVC), or polymethylpentene. Teflon FTP is almost universally usuable due to its chemical inertness and resistance to breakage. However, its high cost severely limits its use. LPE, on the other hand, offers the proposition of chemical resistance and low cost when inorganic wastes are involved.

I-1-103 June 24, 1987 Class containers are relatively inert to most chemicals on the used to collect and store almost all hazardous vaste samples except those that contain strong alkali and hydrofication acid. Soda glass bottles are suggested due to their low cost and ready availability. Borosilicate glass containers, such as Pyrex and Corex, have advantages relative to inertness and resistance to breakage respectively but are expensive and not always readily available. Glass containers are generally more fragile and much heavier than plastic containers. Glass or FEP containers must be used for waste samples that will be analyzed for organic compounds.

The containers must have tight, screw-type lids. Plastic bottles are usually provided with screw caps made of the same attential as the bottles. Buttress threads are recommended. Pap liners are not usually required for plastic containers. Teflon cap liners should be used with glass containers supplied with rigid plastic screw caps. These caps are usually provided with waxed paper liners. Other liners that may be suitable are polyethylene, polypropylene, neoprene, and teflon FIP plastics. Teflon liners may be purchased from plastic specialty supply houses (e.g., Scientific Specialties Service, Inc., P.O. Box 252, Randallstown, Maryland 21133).

## 4.0 Analytical Methodology

4.1 Summary of Methods Used

A summary of the analytical methods utilized at the RES(LA) facility is contained in Table 4.1.

4.2 Additional Methods

RES(LA) derived methods of EPA approved analytical methods used for analytical purposes for wastes are detailed in the following subsections.

PROCEDURE: PROCEDURE NO: DATE ISSUED:

ASH WEIGHT

STANDARD METHODS 209D

SWP-4101

December 1, 1986

- Heat four (4) porcelain crucibles in the muffle oven (600 C°) for 1. 30 minutes.
- 2. Carefully place hot crucibles in dessicator. Allow to cool.
- 3. Weigh empty crucibles. Record Weight.
- 4. Weigh 1gm each of sample no. 1 in two (2) of the crucibles. Record weight. (This takes care of your duplicate) Do not touch crucibles!!! Use tongs!
- Put all four (4) crucibles in the muffle oven (600 C°) for 30 5. minutes.
- 6. Carefully, place hot crucibles in dessicator. Allow to cool.
- Weigh cool crucibles. Record weight. 7.

#### QA/QC

- You must have one duplicate for every ten (10) samples you run. 1.
- 2. You must have two blanks per your ten-hour shift.
- 3. If blanks are off, or dup's are 10% devation, entire set must be redone.

#### CALCULATIONS:

Sample + Crucible Wt.		
- Empty Crucible Wt.		
= Sample Wt.		
Ashed Crucible Wt.		
- Empty Crucible Wt.		
= Ash Wt.		
Ash Wt.	100 = % Ash	

1-1-106 June 24, 1987 PROCEDURE: BTU QA/QC

PROCEDURE NO: SWP-4102

DATE ISSUED: December 1, 1986

Calibrate the Calorimeter at the beginning of your shift:

- 1. Run through BTU procedure with cup empty. (String only)
- 2. Note the Galvanometer reading.
- 3. Weigh up .35 to .40 g Benzoic Acid in the cup.
- 4. Follow BTU procedure.
- 5. Factor = (Acid Weight) (11394)

  (Galvanometer Reading String Reading)

If there is a noticeable change in the factor, recheck the calibration.

If you see a recognizable trend upwards in the factor, notify the Laboratory Manager.

If the factor is too high, check the ignition wire to see if it is getting hot enough to ignite the wick.

Every Monday morning, the day technician is responsible for checking the desiccant in the Benzoic Acid desiccator. If desiccant is going bad, note it on supplies needed list.

I-1-107 June 24, 1987 PROCEDURE:

BTU

BALISTIC BOMB CALORIMETER

PROCEDURE NO:

SWP-4103

DATE ISSUED:

December 1, 1986

- 1. Into a clean BTU cup, weigh .3 to .4 g sample. Record weight.
- 2. Place cup in calorimeter.
- 3. Cut exactly 50mm of cotton wick, using ruler to measure. Sook one end of the wick into the coil on the firing wire. Dip the other end of the wick into the center of the sample.
- 4. Ittach lid to bomb.
- 5. Plug thermocouple wire into hole on the top of bomb.
- 6. Turn Oxygen knob to open. After gauge reads 13.6 atmospheres or 200 psi, turn Oxygen knob back to closed position.
- 7. Using the "Galvo Zero" knob, zero the line on the galvanometer. Wait approximately 30 seconds, checking to see that the zero does not drift.
- 8. Stand back and push the "Fire" button.
- 9. Watch the line on the galvanometer. Record the maximum reading indicated.
- 10. Slowly open the pressure release knob on side of the bomb.
- 11. Remove the lid from the bomb.
- 12. Thoroughly clean bomb interior and cup with DI water. Wipe dry with Kimwipe.

String Reading
Galvanometer Reading
f = BTU calibration factor
Weight of sample

BTU = (Galvanometer Reading - String Reading)f Weight of Sample PROCEDURE:

BTU, SCRUB & HALOGENS

BALISTIC BOMB CALORIMETER

PROCEDURE NO: SWP-4104

DATE ISSUED: December 1, 1986

- 1. Into a clean 250 ml graduated cylinder, place 180ml DI water.
- Insert fritted bubbler/stopper. (Check that the inside of tubing is clean and unclogged).
- 3. Into a clean BTU cup, weigh .3 to .4 g sample. Record weight.
- 4. Place up in calorimeter.
- 5. Cut exactly 50mm of cotton wick, using ruler to measure. Hook one end of the wick into the coil on the firing wire. Dip the other end of the wick into the center of the sample.
- 6. Attach lid to bomb.
- 7. Plug thermocouple wire into hole on the top of bomb.
- 8. Turn Oxygen knob to open. If air bubbles come through the fritted bubbler, tighten the pressure release valve on the side of calorimeter.
- After gauge reads 13.6 atmospheres or 200 psi, turn Oxygen knob back to closed position.
- 10. Using the "Galvo Zero" knob, zero the line on the galvanometer. Wait approximately 30 seconds, checking to see that the zero does not drift.
- 11. Stand back and push the "Fire" button.
- 12. Watch the line on the galvanometer. Record the maximum reading indicated.
- 13. Slowly open the pressure release knob on side of the bomb, allowing gas to flow from the bomb interior through the fritted bubbler. Don't let it bubble violently.
- 14. Remove the lid from the bomb.
- 15. Rinse the cup and inside of the bomb lid with Di water and pour rinsings into the cylinder. Repeat twice.

- 16. Bring the volume of the cylinder up to 250ml with DI water.
- 17. Transfer 50ml of the solution to a clean 200ml beaker.
- 18. Titrate sample solution with .05N NaOH to pH 7. Record ml titrant used.
- 19. Transfer another 50ml of the sample solution to a clear 200ml beaker.
- 20. Add Diphenyl carbazone indicator to produce blue color.
- 21. Titrate with .0141 N Mercuric Nitrate to purple color change. Record ml Titrant used.

I-1-110 June 24, 1987

# BTU, SCRUB & HALOGENS INCINERATION DATA

SAMPLE #	DATE:
String Reading	
Galvanometer Reading	
f=BTU Calibration Factor	
Weight of Sample	
BTU = (Galvanometer Reading - String	Reading) f
Weight of Sample	<del></del>
************	***********
Acid Scrub = (mls NaOH) (N NaOH) (0.0	04) - (250)
(weight of sample)	(50)
Where 0.04 is the milliequivalent we	ight of caustic (NaOH)
mls NaOH	weight of sample
N NaOH	acid scrub
********	******
% Halogen	
mls of HgNO <sub>3</sub>	mls of sample scrub
N of HgNO <sub>3</sub>	% Halogen
% Halogen = (mls of HgNO3) (N HgNO3)	
	er) (4) (weight of sample)
************	****
* Sulfur	
% acid scrub - % Halogen = % sulfur	
% s = (mls of HgNO3) (0.04) - (mls Ho)	ono3) (0.250) of sample)
("	en wanteres

I-1-111 June 24, 1987 PROCEDURE:

FLASH POINT PENSKY-MARTIN

CLOSED CUP

ASTM D93-77; EPA Method 1010

PROCEDURE NO:

SWP-4106

DATE ISSUED:

December 1, 1986

- 1. Make sure the sample cup and stove are clean and dry.
- 2. Fill sample cup to the fill mark with sample.
- Put sample cup in the stove. Slide lid over and "lock" it in place.
- 4. Place thermometer in lid holder.
- 5. Carefully light flame on top of lid.
- 6. Turn on stirrer (Low setting for "watery" liquids. Increase stirrer setting with more viscuous samples) and read initial temperature.
- Turn off stirrer.
- 8. Slide open vents. Hold open for a count of three (3). (Hold down bar on left side so that the lid doesn't lift up. The lid doesn't clamp down as it should. If it lifts even slightly, it may let vapors out and you won't get a correct reading.)
- 9. If it flashes, record temperature as flash point.

NOTE: It must flame at all three vents to be a true flash. If only slight flame at one vent, continue as below.

If it doesn't flash, continue as below.

- 10. Turn on stirrer and record temperature.
- Turn on heater and increase temperature 3-5 degrees.
- 12. Turn off heater and stirrer.
- 13. Repeat #8 and #9.
- 14. If no flash, repeat #10 #13.

#### 0A/0C

- 1. Run a xylene standard at the beginning of your shift. (FP = 89°F)
- 2. You must run one duplicate with every 10 samples analyzed.

PROCEDURE: FLUE DUST RATIO, EXPANSION FACTOR AND BULK DENSITY

PROCEDURE NO:

SWP-4107

DATE ISSUED:

December 1, 1986

- 1. Weigh empty plastic dispo beaker.
- 2. Weigh 100 g sample into beaker.
- 3. Measure and record sample volume in cc's.
- 4. One by one, add 25 g portions to the sample, mixing throughly with each addition, until the waste is solidified.
- 5. Weigh final solidified sample and beaker.
- 6. Record volume in ml of solidified sample.

Flue Dust Ratio = No. of 100 g volumes required to solidify the sample.

\*Expansion Factor = Volume Solidified Sx Original Vol. Sx. - Wt of Flue Dust Added

Bulk Density = Weight of Solidified Sample - Beaker Weight

Volume (in ml) of Solidified Sample - Beaker Weight

\*Assume Flue Dust Density = 1

I-1-113 June 24, 1987 PROCEDURE:

ORGANIC SAMPLES pH

EPA SW-845 METHOD 9045

PROCEDURE NO: SWP-4108

DATE ISSUED: December 1,1986

- Weigh out 10g of sample into a scintillation vial. 1.
- Add 10ml DI water and cap tightly. 2.
- Vortex for one (1) minute. 3.
- 4. Centrifuge to separate layers.
- Using pH paper stick, take pH of sample.

QA/QC

Run 1 duplicate with every 10 samples.

I-1-114 June 24, 1987

PAINT FILTER TEST

EPA SW-846 Method 9095

PROCEDURE NO:

SWP-4109

DATE IGSUED:

December 1, 1986

- Assemble test apparatus by placing a paint filter in a glass funnel, positioning the funnel directly over a 25ml graduated cylinder.
- 2. Place 100g sample in the paint filter.
- Allow to stand five (5) minutes.
- 4. If any liquids have passed from the filter into the cylinder, sample contains free liquids and fails the test.

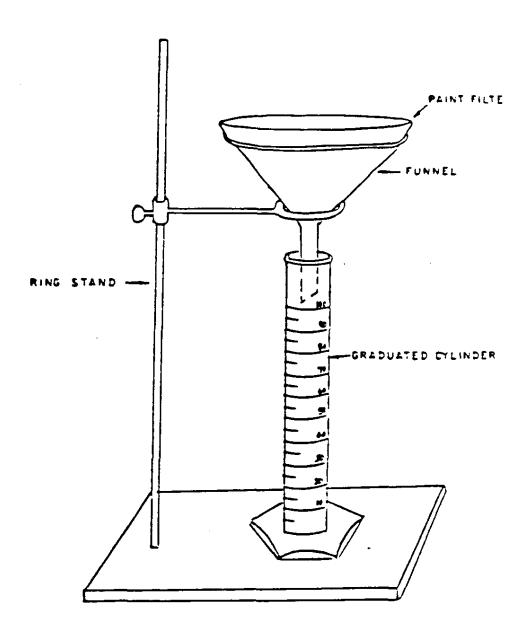


Figure 1. Free Liquid Appendius.

I-1-116 June 24, 1987

# Rollins Environmental Services (LA) Inc.

PROCEDURE:

pH OF SOIL EPA SW-846 METHOD 9045

PROCEDURE NO:

SWP-4110

DATE ISSUED:

December 1, 1986

- Weigh 20g soil in a 50 ml beaker. 1.
- Add 20ml DI water and stir to form a slurry. 2.
- Allow to stand 10 minutes. 3.
- 4. Stir gently.
- 5. Using pH paper stick, take pH of sample.

QA/QC

Run/Duplicate with every 10 samples.

I-1-117 June 24, 1987

PHYSICAL PARAMETERS LAB pH METER CALIBRATION

PROCEDURE NO:

SWP-4111

DATE ISSUED:

December 1, 1986

1. Turn knob on pH meter from standby to pH.

- 2. Read temperature off thermometer; adjust pH meter temperature correction knob to the correct position.
- 3. Rinse electrode with DI water and gently wipe dry with a Kimwipe.
- 4. Place electrode in pH 7 solution; stir slightly. Adjust meter (with calibrate knob) to read 7.00.
- 5. Rinse and dry electrode.
- 6. Place electrode in pH 4 solution; stir slightly. Record meter reading in pH notebook.
- 7. Rinse and dry electrode.
- 8. Place electrode in pH 10 solution; stir slightly. Record meter reading in pH notebook.
- 9. Turn knob back to standby.
- 10. If pH 4 or pH 10 readings are off by more than 0.50, repeat steps 4-8. If it is still off, check with supervisor.

PROCEDUPE:

REACTIVITY WITH FLUE DUST

PROCEDURE NO:

SWP-4112

DATE ISSUED:

December 1, 1986

- 1. Label 5 dispo beakers as 75, 100, 100 dup, 120, 125.
- 2. Place 75 ml, 100 ml, 120 ml, and 125 ml kiln dust in its corresponding beaker.
- 3. Add 100 ml sample to each beaker.
- 4. Mix contents thoroughly.
- 5. Place a thermometer in each beaker and record initial temperature.
- 6. Place beakers under fume hood. Record temperatures after 15 minutes, and again after 30 minutes. Allow samples to stand 4 hours.
- Check contents of beaker, noting solicity of the sample. Sample should not "pour" from the beaker.
- 8. Record any unusual reactions.

I-1-119 June 24, 1987

SPECIFIC GRAVITY - LIQUIDS

ASTM D 1429-76 Method D

PROCEDURE NO: SWP-4113 (Revision 1)

DATE:

February 5, 1987

- Fill a hydrometer cylinder to the mark with sample. 1.
- Place the hydrometer (with the weighted/large end down) into 2. the cylinder.
- Let the hydrometer stabilize. 3.
- Note the level of the hydrometer in the sample. specific gravity directly from the hydrometer stem. Read the 4.

QA/QC

Run a duplicate with every 10 samples analyzed.

1-1-120 June 24, 1987

VISCOSITY

BROOKFIELD THERMOSEL AT ROOM TEMP (77°F)

PROCEDURE NO:

SWP-4114

DATE ISSUED:

December 1, 1986

- 1. Raise viscometer and lift spindle out of the thermo container.
- 2. Using the extraction tool, take the sample holder (chamber) out of the thermocontainer.
- 3. Using syringe, add 8 ml of the sample to sample chamber.
- 5. Lower the #21 spindle into the sample chamber with stem submerged  $\frac{1}{4}$ ".
- 6. Set the viscometer to 100 rpm.
- 7. Turn on viscometer.
- 8. Take reading.
- 9. Calculations: Viscosity Reading x 5 = cps Viscosity.
- 10. If reading is greater than 100, repeat steps 1 through 8 using the #27 spindle.
- 11. Calculations: Viscosity Reading x 25 = cps Viscosity.
- 12. If reading is greater than 100, repeat steps 1 through 8 using the #28 spindle.
- 13. Calculation: Viscosity Reading x 50 = cps Viscosity.

QA/QC

One Duplicate for every 10 samples. Record Duplicate results.

I-1-121 June 24, 1987

% WATER, % OIL, % SLUDGE

PROCEDURE NO:

SWP-4115

DATE ISSUED:

December 1, 1986

1. Mix sample thoroughly.

- 2. Pour 100 ml sample into a clean 100 ml graduated cylinder.
- 3. Allow sample to stand for thirty (30) minutes.
- Read % water (middle layer), oil (top layer), and sludge (bottom layer) directly from graduations on cylinder.

QA/QC = 1 duplicate for every 10 samples analyzed.

DENSITY

Standard Methods 213E

PROCEDURE NO: SWP-4116

DATE:

February 5, 1987

- Weigh an empty 100ml  $\underline{\text{Fisher}}$  Dispo Beaker to the nearest .01 gram.
- 2. Add 100ml well mixed sample to the beaker. Pack it down.
- 3. Reweigh.

Specific Gravity = (Sample + Cylinder Wt.) - (Empty Cylinder Wt.)

QA/QC

You must run a duplicate with every 10 samples analyzed.

IGNITABILITY of Solid Material

EPA SW-846 Section 2.1.1

PROCEDURE NO: SWP-4117

DATE:

May 15, 1987

1. Place 10 gm sample in an aluminum weighing dish.

- 2. Light burner.
- Pass flame over the top of the sample, allowing flame to touch the sample.
- Note ignitability. The sample must catch fire readily and sustain a burn for at least 5 seconds. EPA SW-846 defines Ignitability as: "Is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption or moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard."
- 5. Notify Lab Supervisor or Technical Manager during weekdays. Notify Shift Supervisor during off-hours.

NOTE: Solid and sludge samples are tested for IGNITABILITY by the above procedure. Liquid samples are analyzed for FLASH POINT using Pensky-Martens Closed Cup Analyzer.

TOTAL SOLIDS

Standard Methods 209A

PROCEUDRE NO:

SWP-4118

DATE:

April 30, 1987

- Dry numbered weighing pans for 1 hour min. in a 105 deg. oven.
- Using tongs remove pans from oven. Place in dessicator & cool. DO NOT TOUCH PANS. The oil on your hands will affect your results.
- 3. Liquid Sample: Quantitatively place 10ml sample into weighing pan.

Solid Sample: Place 10g sample into weighing pan.

- 4. Dry for 1 hour in 105 deg. oven.
- Using tongs remove from onven & cool in dessicator. DON'T TOUCH.
- 6. Weigh.
- 7. Dry for 1 hour in 105 deg. oven.
- Reweigh. If second weight differs from initial weight by 4% or 0.5 mg, repeat step
   If you cannot get weights in spec., start over.

### QA/QC

1 Duplicate and 2 blanks with every 10 or set of samples, whichever comes first.

Calculation:

Liquid Sample:

Total Solids (mg/l) = Weight of Dried Sample X 1000
Sample Volume

Solid Sample:

Total Solids (mg/kg) = Weight of Dried Sample X 1000 Sample Weight

> I-1-125 June 24, 1987

BTU, SCRUB, & HALOGENS OF MATERIAL

HAVING LESS THAN 9,000

ASTM D-293

PROCEDURE NO: SWP-4119

DATE:

May 27, 1987

- If sample is compatable with diesel, thoroughly combine a 50:50 mixture of sample and diesel.
- 2. If sample is not compatable with diesel, but is compatable with methanol, thoroughly combine a 50:50 mixture of sample and methanol.
- 3. Following SWP-4104, run BTU, Scrub, & Halogens on the diesel or methanol, depending on compatability with sample. Record results.
- 4. Following SWP-4104, run BTU, Scrub, & Halogens on the 50:50 mixture. Record results.
- 5. (BTU 50:50 mixture) - (BTU Diesel or Methanol) = BTU of sample.
- (Scrub 50:50 mixture) (Scrub, Diesel or Methanol) = Scrub of Sample.
- 7. (Halogens 50:50 mixture) - (Halogens Diesel or Methanol) = Halogens of sample.

ASH WEIGHT OF INCINERATION MATERIAL

STANDARD METHODS 209D

PROCEDURE NO: SWP-4120

DATE:

June 11, 1987

NOTE:

Ash must be the first test run on an incineration load.

- Heat four (4) porcelain crucibles in the muffle oven (690 C) for 1. 30 minutes.
- 2. Carefully place hot cruciples in dessicator. Allow to cool.
- 3. Weigh empty crucibles. Record weight.
- Weigh 1gm each of sample no. 1 in two (2) of the crucibles. 4. Record weight. (This takes care of your duplicate) DO NOT TOUCH CRUCIBLES!!! USE TONGS!
- 5. Put all four (4) crucibles in the muffle oven (600 C) for 15 minutes.
- 6. Carefully, place hot crucibles in dessicator. Allow to cool for 15 minutes.
- 7. Weigh cool crucibles. Record weight.

### QA/QC

- 1. You must have one duplicate for every twenty (20) samples you run.
- 2. You must have two blanks per your ten-hour shift.
- 3. If blanks are off, or dup's are 15% deviation, entire set must be re-done.

### **CALCULATIONS:**

Sample & Crucible Wt.
- Empty Crucible Wt.
= Sample Wt.
Ashed Crucible Wt.
- Empty Crucible Wt.
= Ash Wt.
Ash Wt. x 100 = % Ash
Sample Wt.

I-1-127 June 24, 1987

COMPATIBILITY

PROCEDURE NO:

SWP-4121

DATE ISSUED:

June 19, 1987

- 1. Into a clean 400ml beaker place 100ml well-mixed sample.
- 2. Add 100ml of the contents of the tank to which the sample stream will be added.
- 3. Record initial temperature. Check and record temperature of the mixture every 15 minutes for one hour.
- 4. Check for signs of reaction every 15 minutes for one hour.
  - a. Odor
  - b. Fumes
  - c. Layering
  - d. Temperature Change
  - e. Precipitate Formation
- 5. Record results on the Laboratory Compatibility Form.

## LABORATORY COMPATIBILITY FORM

BR#	DATE:			
Blend Source	<u> </u>			
	(CHECK ONE) YES NO			
ODOR				
FUMES	<del></del>			
LAYERING	<u> </u>			
TEMPERATURE CHANGE		-		
PRECIPITATE				
TEMPERATURE:	-			
Initial				
15 min				
30 min				
45 min				
60 min				
COMMENTS:				
ANALYST:	Date/Time Cor	nplete:		

I-1-129 June 24, 1987

HET ASH DIGESTION METALS ANALYSIS

PROCEDURE NO:

SWP-4501

DATE ISSUED:

December 1, 1986

- 1. Weigh approximately 2.00g sample into a clean 200ml beaker. Record sample weight. If this is your first sample, repeat this step (Duplicate).
- 2. Carefully add 10ml conc. H2SO4 (Sulfuric Acid).
- 3. To an empty clean 200ml beaker add 10ml conc. H2SO4 (Blank). Treat blank as a sample, carrying it through the entire procedure. Anytime you add more HNO3 to the sample, add the same amount to the blank.
- 4. Heat on hot plate (high setting) until sample fumes (white smoke) and contents of the beakers turn black and charry.
- 5. Remove from heat and allow to cool.
- 6. Carefully add 5ml conc. HNO3 (Nitric Acid), rinsing down the sides of the beaker.
- 7. Heat on hot plate until the sample turns black and charry. WATCH OUT! Don't let it boil over.
- Repeat steps 5 & 6 until the contents of the beakers turn clear, and there is only 1 to 2 ml remaining in each beaker.
- Add 2.5ml conc. HNO3 to each beaker and heat gently to dissolve any solids. Watch samples carefully! They may "bump" and spill over.
- 10. QUANTITATIVELY TRANSFER\* the solution to a 25ml volumetric flask. Bring it up to the mark with DI water. Pour into a labeled, clean specimen cup.
- 11. If you only have 50ml volumetric flasks, use 5ml HNO3 in step 8. Make sure you record which flash you use.

\*OUANTITATIVE TRANSFER =

- Pour sample into the flask.
- Rinse beaker with a small amount of DI water.
- 3. Pour rinsings into the flask.
- Repeat steps 2 & 3 two more times.

QA/QC

- Digest a blank with every set of samples.
- 2. Digest 1 duplicate with every 10 samples.

DIGESTION OF ORGANIC SAMPLES (OIL, ECT.) FOR METALS ANALYSIS

EPA SW-846 - Method 3030

PROCEDURE NO: SWP-4502

DATE ISSUED:

December 1, 1986

1. Weigh out 4g of sample into a 300ml Kjeldahl flask.

- 2. Add 20ml H2504 and a glass bead.
- 3. Swirl flask to mix contents.
- 4a. Connect flask to an Allihin condenser which has been packed to 50mm with rashing rings. (If rashing rings are unavailable, you can use glass beads.) Turn on cooling water.

- 4b. Direct a jet of cool air onto the neck of the flask.
- 5. Place bottom of flask in a heating mantle (or use a burner).
- 6. Heat on low heat until dense white fumes appear in the flask and the solution boils.
- Cautiously add 2ml HNO3 through the top of the condenser. 7. CAREFUL! The sample may boil over!.
- Continue heating gently until the dense white fumes reappear. 8.
- 9. Repeat steps 7 & 8 until the sample solution turns a "straw" (pale yellow/orange) color.
- 10. Remove flask from heating mantle and allow to cool for 5 minutes.
- Carefully add 1ml H202 (30% Hydrogen Peroxide) dropwise through the top of the condenser.
- 12. Replace the heating mantle and heat until dense white fumes appear and the sample solution boils.
- 13. While the sample is still boiling, carefully add 2ml HNO3 dropwise through the top of the condenser.
- 14. Continue heating until dense white fumes reappear.
- 15. Repeat steps 11 thru 14 until the sample solution is colorless.

I-1-131 June 24, 1987 PROCEDURE: MICROWAVE DIGESTION OF SAMPLE

PROCEDURE NO: SWP-4503

DATE: June 11, 1987

- Weigh 1/2 gram sample in digestion vessel.
- Add 12 ml conc. HNO3.
- 3. Attach relief valve to lid.
- Screw lid on finger tight.
- 5. Place vessel in capping station and torque to 5lbs.
- 6. Digest at 100% power for 6 minutes.
- 7. Digest at 0% power for 6 minutes.
- Vent vessels into the center flask by pressing against the top nut.
- 9. Digest at 100% power for 2 minutes.
- 10. Cool for 3 minutes.
- 11. Repeat steps 6, 7, & 8. If sample is not digested (clear), continue. If sample is digested, go to step 19.
- 12. Digest at 100% power for 7 minutes.
- 13. Digest at 0% power for 4 minutes.
- 14. Vent vessels into the center flask. If sample is not digested, continue. If sample is digested, go to step 19.
- 15. Digest at 100% power for 8 minutes.
- 16. Digest at 0% power for 4 minutes.
- 17. Vent vessels into the center flask. If sample is not digested, continue. If sample is digested, go to step 19.
- 18. Digest at 100% power for 10 minutes.

Page two of two SWP-4503

- 19. Remove from microwave and cool to room temperature.
- 20. Vent vessels to center flask.
- 21. Quantitatively transfer to receiving cups and bring up to volume.

NOTE: There may be a small amount of parafin precipitation following water addition. If so, filter precipitate after you take sample up to volume.

ASH TESTING PROCEDURE

Hazardous & Solid Waste Amendment: Land Disposal Restrictions: Final Rule

PROCEDURE NO:

SWP-4701

DATE ISSUED:

December 3, 1986

1. Each ash bin is sampled by Operations. Sample containers are labeled with the corresponding date and bin number.

- 2. Project Chemist makes a composite of ash samples collected in a 24-hour period.
- 3. The Instrument Chemist analyzes the composite by Gas Chromatography to determine organic content. GC methods utilized are: EPA SW846 Methods 8010, 8015,8020 & 8040.
- 4. Should GC analysis of the ash composite detect any of the compounds listed in Table CCWE of 40 CFR Part 268.41, and the concentration of the compound(s) detected be above the limits specified in said table, the individual bin samples (rather than the composite) will be analyzed to determine which bin contains the identified compound.
- 5. Operations will be notified as to which ash bin contains spent solvent above the 40 CFR Part 268.41 specified limit.

I-1-136 June 24, 1987

# Rollins Environmental Services (LA).

PROCEDURE:

POLYCHLORINATED BIPHENYLS IN TRANSFORMERS FLUID & WASTE OIL

EPA 600/4-81-045

PROCEDURE NO: SWP-4601

DATE ISSUED: December 9, 1986

- Weigh 1 gm sample in a scintillation vial.
- 2. Add 10 ml Hexane.
- Vortex 2 minutes.
- 4. Centrifuge to separate possible layers.
- 5. Inject 1 ml of Hexane Layer into Gas Chromatograph set at the following conditions:

Injection Temperature: 250°C

Detector Temperature: 325°C

Oven Temperature: 200°C

Detector: Electron Capture Detector

Column: DB5 Capillary Column or 3% SP-2100 Packed Glass Column

Carrier Gas: Argon/Methane or High Purity Nitrogen

Purge Gas: Argon/Methane

Run time: 30 minutes minimum.

### QA/QC

- 1. Applicable Standard(s) must be run with each set of samples.
- 2. A blank must be analyzed with each set of samples.
- One (1) duplicate must be analyzed for every 10 samples or with each set of samples, which ever comes first.
- 4. One (1) spiked sample must be analyzed for every 10 samples or with each set of samples, which ever comes first.

SLURRY TESTING PROCEDURE

Hazardous & Solid Waste Amendments Land Disposal Restrictions; Final Rule

PROCEDURE NO:

SWP-4702

DATE ISSUED:

December 3, 1986

1. A slurry sample is collected by Operations at the Scrubber Basin Initial Mixing Tank.

- 2. The Instrument Chemist analyzes the slurry to determine organic content. GC methods utilized are: EPA SW846 Methods 8010,8015, 8020 & 8040.
- 3. Should GC analysis of the slurry detect any of the compounds listed in Table CCWE of 40 CFR Part 268.41, and the concentration of the compound(s) be above the limits specified in said table, Operations will be notified.

# Rollins Environmental Services (LA) Inc.

FROCEDURE: LABORATORY SURFACE WATER MOVEMENT PROCEDURE

PROCEDURE NO: SWP-4703

DATE: January 19, 1987

1. Operations will take basin samples and deliver them to the Lap. If a basin sample is delivered, assume Operations wants to pump from that basin.

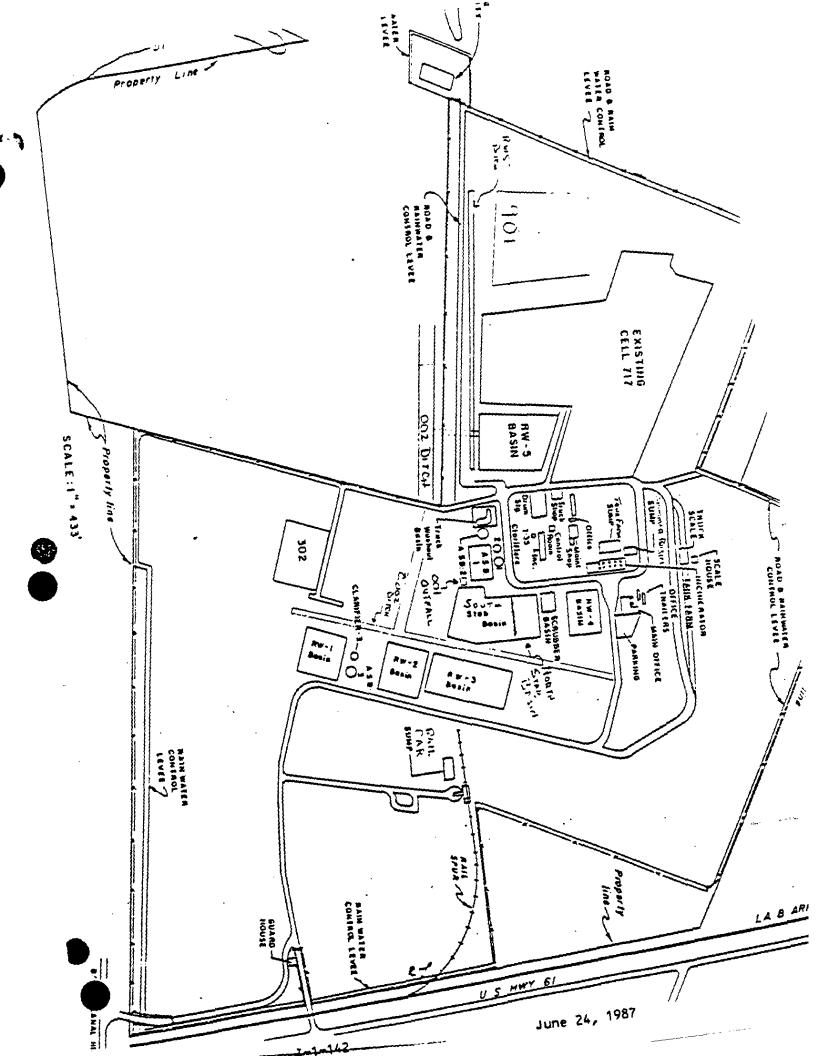
- 2. Run pH on sample.
- 3. Analyze COD. (Analyze one duplicate COD).
- 4. Complete Surface Water Movement Sheet using the attached table.

SOURCE	TEST PARAMETERS	WATER MOVEMENT
Tank Farm Sump		Pump to 302
Truck Wash		Pump to 3C2
Railcar Unloading Sump (Exxon Pit)		Pump to 302
Skimmer Basin		Fump to 302

I-1-140 June 24, 1987

## WATER MOVEMENT CRITERIA

SOURCE	TEST PARAMETERS	WATER MOVEMENT
RWl	If pH 6-9, COD≤50 If pH 6 or 9, or COD>50	Pump to 002 Ditch Pump to 302
RW2	If pH 6-9, COD≤50 If pH 6 or 9, or COD>50	Pump to 302 Ditch Pump to 302
EWR	If pH 6-9, COD≤ 50 If pH 6 or 9, or COD>50	Pump to 302 Ditan Pump to 302
RW4		Pump to 302
	NOTE: If Test Parameters are good, alternate movement is available only with Management Approval.	
RW5	If pH 6-9, COD ≤ 50 in both RW5 and RW5 ditch	Pump to 602 Ditch
	NOTE: When RW5 is opened to 002 Ditch, all water in RW5 Ditch will flow to 002 Ditch. WATCH OUT!	
	If pH < 6 or >9, or COD >50	Pump to 302
RW5 Ditch	If pH 6-9, COD ≤ 50 If pH < 6 or > 9, or COD > 50	Pump to 002 Ditch Pump to RW5
	NOTE: When pumping RW5 Ditch to RW5, either hold RW5 or send RW5 to 302. RW5 CANNOT be pumped to 002 if RW5 Ditch = (pHZ6 or >9, or COD > 50). WATCH OUT!	
901 Run-off	(Inactive)	Pump to RW5 Ditch
	NOTE: If 901 Run-off (if pH<6 or >9, or COD >50) pump to RW5 Ditch, but DO NOT open RW5 Ditch to 002. Remember, 901 Run-off pumps to RW5 Ditch; RW5 Ditch then goes to 002 Ditch or RW5.	-
717 Run-off	(Active Face)	Pump to 302
	I-1-139 June 24, 1987	



## SURFACE WATER MOVEMENT REQUIREMENTS

DATE:	Source: _		
water Quality: pH	COD	mg/]TOC	
Movement Approved to:			
Movement Requested by:			
Movement Approved by:			

I=1-141 June 24, 1987 PROCEDURE: CAUSTIC CONCENTRATION METHODOLOGY

PROCEDURE NO: SWP-4705

DATE ISSUED: March 19, 1987

PURPOSE: Method of Establishing a 20% NaOH Concentration in

the Caustic Tank (T-36) at all times.

I. Scope and Discussion

The caustic storage tanks used in the neutralization and halogenated and sulfurnated compounds in the incineration process are T-37 for receiving, dilution, mixing and transfer to T-36. T-36 is used to feed the system only. Tank 37 is the dilution tank in which water is to be added to obtain a 20% mixture of NaOH. This mixture should be agitated for a minimum of three hours prior to transfer to Tank 36. The Ksp for caustic is 42g in 100ml of water, which makes it very soluble. The specific gravity of 50% NaOH is 1.330 and water is 1.0 which lends to the fact that caustic would settle to the bottom of the tank if not properly mixed. Thus, when transferred to T-36 the mixture is not homogeneous and causes problems in the scrubber process.

- 1. If temperature is not 60°F, analyze T-37 material for percent NaOH using the titrametric method listed below. The concentration table (attached) is only to be used in instances when the sample is actually 60°F.
- Pipet 5.0ml sample in 100ml beaker and place on magnetic stirrer.
- Dilute with distilled water to 50ml and record the pH. Add stirring bar.
- 4. Titrate with HCl to just past the neutralization point (pH = 7.0).
- 5. Note the initial pH and the volume of titrant used.

Calculation for % base are:

% NaOH = 
$$\frac{T \times 1.0 \times E}{SpGr \times 5 \times 10^3} \times 100$$

Where T = ml Titrant used

1.0 = normality of Titrant used (HCl)

E = Equivalent WT of NaOH = 40 g/m

SpGr = Specific Gravity of sample

S = ml sample used

103 = gm wt. of 1 liter H 0

I-1-144 June 24, 1987

REJECTING A LOAD

PROCEDURE NO: SWP-4704

DATE:

February 18, 1987

- 1. On the Manifest write "REJECTED by RES due to (reason rejected)", Date, and Initial (Technician) in Space 19.
- 2. DO NOT sign the Manifest in space 20.
- Tear off transporter copies of manifest, pink and blue and 3. return them to the driver.
- Write "Rejected by RES due to (reason rejected)", date, & 4. initial on Bill of Lading.
- 5. Tear off driver's copy of Bill of Lading and return to driver.
- Put remaining paperwork together, and give to Manifest Clerk. 6.
- 7. Manifest Clerk will report the rejection to LA-DEQ during their normal working hours.

EXHIBIT D-2

QUALITY ASSURANCE/QUALITY CONTROL

EXHIBIT I-1-7

QUALITY ASSURANCE/QUALITY CONTROL

# ROLLINS ENVIRONMENTAL SERVICES (LA), INC. QUALITY CONTROL/QUALITY ASSURANCE

### 1. INTRODUCTION

Ourlity requence (OA) is a system for ensuring that all information, data, and resulting decisions compiled under a specific task are technically sound, statistically valid, and properly documented. Duality control (OC) is the mechanism through which quality assurance achieves its goals. Quality control programs define the frequency and methods of checks, audits, and reviews necessary to identify problems and dictate corrective action, thus verifying product quality.

RES (LA), Inc. Laboratory is conducting a QC/QA program to achieve our goals. When RES (LA), Inc. are choosing contractors to perform sampling or analytical work will also make their choice after evaluating the contractor's QC/QA program.

### 2. PROGRAM GOALS

The program goals are:

- to obtain a representative sample of the sampling material.
- to achieve the precision and accuracy of the analytical work.

### 3. PROGRAM DESIGN

QC and QA measures are the mechanisms used to monitor the program and to ensure that all data generated are meeting the program goals. The laboratory supervisor is assigned the responsibility of ensuring that the QC/QA measures are properly employed.

### 4. GUIDET THE

At RES (LA), Inc. the broad guidelines of a QC/QA program contains the following:

- 4.1 The intended use for the data and the necessary level of precision and accuracy of the data for these intended uses. For example: The NPDES permit related parameters require high level of precision and accuracy of the data, while in plant monitoring of leachate required less frequency of OC/QA. Low level QC/QA applied to leachate is due to further treatment as needed and slow change of the leachate water quality.
- 4.2 RES (LA), Inc. sampling program is initiated by the following activities:
  - a) Permitting and compliance,
  - b) Process control and in plant monitoring,

Page 2-QC/QA Quidelines-Continued

- c) Design and construction, and
- d) Research and development.

A representative sampling at RES (LA), Inc. site shall consider:

- Selecting appropriate sampling locations, depths, etc., for routine in plant monitoring samples. This will provide comparison of the known parameter data with respect to time, waste stream change, treatment as well as analytical calculations.
- Determining which parameters are to be measured for all routine and non routine in plant monitoring points.
- Determining which media is to be sampled and selecting appropriate sample containers, preservatives, etc., according to EPA Manual of Methods for Chemical Analysis of Water and Wastes.
- Selecting the frequency of sampling, length of sampling period, and type of sampling (composite or grab).

### 4.3 Analytical Plan-

RES (LA), Inc. analytical plans are based on EPA Manual of ... Methods for Chemical Analysis of Water and Wastes, Standard Methods for the Examination of Water and Wastewater, EPA Test Methods for Evaluating Solid Waste, etc. The necessary modifications are established for some parameters to suit the plant needs.

The combination of these three guidelines will form a valuable and accurate information for both in plant monitoring and NPDES discharge monitoring program.

Planning for the inclusion of proper and sufficient QC/QA activities, including the use of QC samples through all phases of the study to ensure that the level of the quality of the data, will meet the requirement of the intended use(s) of the data.

### 5. OC/OA PROGRAM

As we emphasized before, RES (LA), Inc. analytical program is initiated with (a) permitting and compliance, (b) process control and in plant monitoring, (c) design and construction, and (d) research and development. This program is also divided into routine analysis and non routine analysis. The routine analysis schedule along with QC frequency

Page 3-QC/QA QC/QA Program-Continued

is listed in Table I, while non-routine analysis will depend on the need of the plant operation with respect to time, place and parameter(s).

Following are areas that required the QC/QA program:

#### 5.1 INSTRUMENT

The instruments used in our laboratory for analysis include:

Analytical balance
pH/selective ion meter
Conductivity meter
Turbidibimeter
Spectrometers
Organic carbon analyzer
Gas chromatograph
Cas chromatograph/mass spectrometer
Ovens
Moistrue balance
Bomb calorimeter
Viscosity meter
Recorders

The manual of these instruments which includes, but is not limited to, the maintenance, calibration, performance of the equipment shall be filed for laboratory personnel's usage.

### 5.2 GLASSWARE

The measurement of trace constitutents in water and waste demands maximum sensitivity. This is especially true for metals and trace organics. Therefore, the cleanliness of the glassware and use of the volumetric ware becomes very important as part of the QC/QA program.

The method of cleaning should be adapted to both the substances that are to be removed, and the determination to be performed. Water soluble substances are simply washed out with hot or cold water, and the glassware is finally rinsed with successive small amounts of distilled water. Other substances more difficult to remove may require the use of a detergent, organic sovent, dichromate cleaning solution, or nitric acid. Then rinse the glassware with a lot of tap water followed by distilled water at least two times. The analyst should be cautioned that when chromium is included in the scheme of analysis, it is imparative that the last trace of dichromate be removed from the glassware. In all cases it is good practice to rinse glassware with tap water as soon as possible after use. Material allowed to

I-1-152 June 24, 1987 Fire and the second sec

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Plant ASS-111

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Pump road ASS-111

Adjacont to MM-21

Account from Administrative building

Behind Dry Storage Building .

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| COD- 2/month | COD- 2/month | Tas - 2/month | Tas - 2/month | Tas - 2/month | Tas - 2/month | Color 
Truckwoods, Tonktorn, ESS, and MSS

BUPLICATES:

. . Lumbinos Louciscia (Thursday)

MUI-Sample to taken at: 8:00 a.m. & flow chart

007-Sumple 1/slay II Finning, and every 24 instra thetsetter witte

In Plant Sumiles Ishen bermen 1:30-2:30 p.m. dafir.

Sally Seport Jeausd by 4:30 p.m. (M-f)

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QUALITY CONTROL-SPIESS AND DUPLICATES FOR DOI-HERISM OF

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002 analyses are: Otl & Greece, COD and bObby plus pts.

SPIKES

Page 4-QC/QA Glassware-Continued

dry on glassware is much more difficult to remove.

Volumetric glassware, especially burets, may be thoroughly cleaned by a mixture containing the following:

- . 30 g of sodium hydroxide,
- . 4 g of sodium hexameta phosphate,
- . 8 g of trisodium phosphaste, and
- . 1 d of water.

A gram or two of sodium lauryl sulfate or other surfactant will improve its action in some cases. This solution should be used with a burst brush. A persistent greasy layer or spot may be removed by scetone or by allowing a warm solution of sodium hydroxide, about 1 gram per 50 ml of water for 10 to 15 minutes; after rinsing with water, dilute hydrochloric acid and water again, the glassware is usually clean. To dry glassware, rinse with acetone and blow or draw air through it.

RES (LA), Inc. also uses disposable glassware in most cases to avoid the above mentioned contamination.

RES (LA), Inc. uses accurately calibrated glassware for precise measurements. This group includes volumetric flasks, volumetric pipets, and accurately calibrated burets. RES (LA), Inc. sometimes uses less accurate types of glassware including graduated cylinders, measuring pipets when exact volumes are unnecessary.

The precision of volumetric work depends in part upon the accuracy with which volumes of solutions can be measured. There are certain sources of error that must be carefully considered. The volumetric apparatus must be read correctly; that is, the bottom of the meniacus should be tangent to the calibration mark. There are other sources of error, however, such as changes in temperature, which result in changes in the actual capacity of glass apparatus and in the volume of the solutions. The capacity of an ordinary glass flask of 1000-ml volume increases 0.25 ml/deg with rise in temperatue, but if the flask is made of borosilicate glass, the increase is much less. One thousand milliters of water or of most 0.1% solutions increases in volume by approximately 0.20 ml/deg increase at room temperature. Thus solutions must be measured at the temperature at which the apparatus was calibrated. This temperature (usually 20 C) will be indicated on all volumetric ware. There may also be errors of calibration of the apparatus; that is, the volume marked on the apparatus may not be the true volume. Such errors can be eliminated only by recalibrating

Page 5-QC/QA Classware-Continued

the apparatus or by replacing it.

Volumetric apparatus is calibrated to contain or to deliver a definite volume of liquid. This will be indicated on the apparatus with the letters "TC" (to contain) or "TD" (to deliver). Volumetric flasks are calibrated to contain a given volume and are available in various shapes and sizes.

Volumetric pipets are calibrated to deliver a fixed volume. The usual capacities are 1 through 100 ml although micropipets are also available. Micropipets are most useful in furnace work and are available in sizes ranging from 1 to 100 ul.

In emptying volumetric pipets, they should be held in a vertical position and the outflow should be unrestricted. The tip of the pipet is kept in contact with the wall of the receiving vessel for a second or two after the free flow has stopped. The liquid remaining in the tip is not removed: this is most important.

Measuring and serological pipets should also be held in a vertical position for dispensing liquids; however, the tip of the pipet is only touched to the wet surface of the receiving vessel after the outflow has ceased. For those pipets where the small amount of liquid remaining in the tip is to be blown out and added, indication is made by a frosted band near the top.

Burets are used to deliver definite volumes. The more common types are usually of 25-or 50-ml capacity, graduated to tenths of a milliter, and are provided with stopcocks.

General rules in regard to the manipulation of a buret are as follows: Do not attempt to dry a buret that has been cleaned for use, but rinse it two or three times with a small volume of the solution with which it is to be filled. Do not allow alkaline solutions to stand in a buret because the glass will be attacked, and the stopcock, unless made of Teflon, will tend to freeze. A 50-ml buret should not be emptied faster than 0.7 ml/s, otherwise too much liquid will adhere to the walls and as the solution drains down, the menisous will gradually rise, giving a high false reading. It should be emphasized that improper use or reading of burets can result in serious calculation errors.

In the case of all apparatus for delivering liquids, the glass must be absolutely clean so that the film of liquid never breaks at any point. Careful attention must be paid to this fact or the required amount of solution will not be delivered. The various cleaning agents and their use are

Page 6-QC/QA Glassware-Continued

described later.

## 5.3 STORING AND MAINTAINING QUALITY OF STANDARD REAGENTS AND SOLVENTS

Having performed the tasks of selecting, preparing, and verifying the suitability of reagents and solvents, the analyst must properly store them to prevent contamination and deterioration prior to their use. Borosilicate glass bottles with gound-glass stoppers are recommended for most standard solutions and solvents. Plastic containers such as polyethylene are recommended for alkaline solutions. Plastic containers must not be used for reagents or solvents intended for orgainc analyses. However, plastic containers may be used for reagents not involved with organic analyses if they maintain a constant volume, and it it is demonstrated that they do not produce interferences and do not absorb constituents of interest. It is important that all containers be properly cleaned and stored prior to use.

Standard reagents and solvents must always be stored according to the manufacturer's directions. Reagents or solvents that are sensitive to the light should be stored in dark bottles and in a cool, dark place. Some reagents require refrigeration.

Adsorbents for thin-layer and column chromatography are stored in the containers that they are supplied in, or according to the requirements of indivdual methods. When new stock solutions are necessary, dilutions of the old and new standard should be compared to determine their accuracy.

The analyst should pay particular attention to the stability of the standard regents. Standards should not be kept longer than recommended by the manufactuer or in the method. Some standards are susceptible to changes in normality because of adsorption of games or water vapor from the air.

The concentration of the standards will change as a result of evaporation of solvent. This is especially true of standards prepared in volatile organic solvents. Therefore, the reagent bottles should be kept stoppered, except when actually in use. The chemical composition of certain standards may change on standing. Certain pesticides, for instance, will degrade if prepared in acctone that contains small quantities of water. Thus, it is essential that working standards be frequently checked to determine changes in concentration or composition. Stock solutions should be checked before preparing new working standards from them.

Page 7-QC/QA Storing and Haintaining-Continued

## 5.4 . QUALITY CONTROL AND QUALITY ASSURANCE

After basic elements of quality control (QC) pertaining to laboratory services, instrumentation, glassware, reagents, solvents, and gases; the analyst should insure that valid data continue to be produced. Systematic daily checks must show that the test results remain reproducible, and that the methodology is actually measuring the quantity in each sample. In addition, QC must begin with sample collection and must not end until the resuting data have been reported. QC of analytical performance within the laboratory is thus but one vital link in the dissemination of valid data to the public. Understanding and concientious use of QC among all field sampling personnel, analytical personnel, and management personnel is imperative at RES (LA), Inc. A control chart concept and approach is attached (Appendix A) as a reference to the analysts.

A laboratory quality assurance program includes control procedures for the following parameters:

. Standard ourves.

A new standard ourve should be established with each new batch of reagents or annually. The oureve should have at least three (3) points and cover the necessary concentration range.

- . Quality Control checks for analytical run.
- At least 10% of quality control sample shall be run as:
  - . Blank on water, waste and reagents.
  - . Midpoint atandard.
  - . Spike to determine recovery.
  - . Duplicate analysis.
- . Inter-laboratory QC.

RES (LA), Inc. Laboratory currently participates in the Inter-laboratory QC by receiving and analyzing EPA quality control nample. RES (LA), Inc. shall contact the National Bureau of Standard for standard reference materials, commercial sources and local organization for QC sample program.

Page 8-00/04 Quality Control-Continued

. Data Handling and Record Keeping.

The Shewhart control chart for percent recovery is used in RES (LA) Inc. Laboratory for QC data handling. The upper control limit (UCL) and lower control limit (LCL) are established based on laboratory QC data, regulartory guideline. Once the UCL and LCL are set for each parameter, re-analysis must be inforced when QC data (percent recovery) falls out of this range.

RES (LA), Inc. Laboratory has developed a Chain-of-Custody beginning with sampling and continuing through data output including QC work. An example of Chain-of-Custody for the laboratory analysis is attached (Table II).

### TABLE II

## CHAIN-OF-CUSTODY

RES (LA). Inc. shall demonstrate the reliability of data by proving the chain of possession and oustody of any sample collected at the Baton Rouge facility. There are two steps in the Chain-of-Custody procedure: the transfer of samples from the field to the RES (LA) laboratory and/or the transfer of samples to outside laboratories. A general practice of minimal transfers of sample bottles and good record keeping should provide adequate Chain-of-Custody control.

The field sampler is responsible for the custody and care of collected samples until the containers have been transferred to the oustody of laboratory or another custodian. After sample collection, the Chain-of-Custody form should be filled out in legible handwriting, and the bottle should be sealed in a manner which covers the string or wire tie of the Chain-of-Custody tag to prevent tampering. Pigure 1 presents a typical Chain-of-Custody sample bottle tag and Figure 2 presents a Chain-of-Custody form for transferring bulk samples to a laboratory. Pigure 3 presents RES (LA), Inc. routine laboratory Chain-of-Custody analytical work sheets. The sampler must assure that the sample containers are in the sampler's physical possession, in view at all times, or stored in a looked area to prevent tampering. Additional information is available from EPA Region VI personnel, EPA-600/4-76-049, "Handbook for Sampling and Sample Preservation of Water and Waste Water," or the NWWA/EPA Series, "Manual of Ground-Water Sampling Procedures."

FIGURE 1. CHAIN OF CUSTODY RECOND - BOTTLE SAMPLE TAG

71116	j			Date/Time	Date/Time	Date/Time	
COLLECTION DATE PRESERVATIVE	1	-	FRONT	Sample received:	Sample received:	Sample received:	
SAMPLE 1	) H	ALMARKS (analysis required, etc.)		Sample relinquished from:	Sample relinquished from:	Sample relinguished from:	Method of shipments

\_\_

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CHAIN OF CUSTOUY RECORD FUR BUILBENT OF SAMPLE BOTTLES

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In the 1920's, Dr. Waiter A. Shewhart of Bell Telephonic controls, Inc. developed the theory of control charts as a basic method for evaluating the quality of products from manufacturing processes. His book (1) on statistical QC grew out of this original work. Later, acceptance of his concepts and related statistical techniques within industry led to refined, quantitative evaluations of product quality in nianufacturing. Dr. Shewhart's work on production processes assumed a uniform product manufactured in large numbers and inspected on a continuous basis through the periodic analysis of samples of n production units. The resulting data,  $x_1, x_2, \dots x_n$ , were then used to estimate precision, as the standard deviation S or range R, and accuracy, as the arithmetic mean X. These statistics were calculated as follows:

$$S = \sqrt{\frac{\sum_{i=1}^{n} x_{i}^{2} - \left(\sum_{i=1}^{n} x_{i}\right)^{2} / n}{n-1}}$$

R = the largest of the  $X_i$  - the smallest of the  $X_i$ 

$$\bar{X} = \frac{\sum_{i=1}^{n} X_{i}}{n}$$

These-statistics were evaluated by plotting them on control charts developed from similar statistics taken while the process was under properly controlled operation. The elements common to such control charts are represented in figure 6-1. They include an expected value (the central line) and an acceptable range of occurrence (the region between upper and lower control limits).

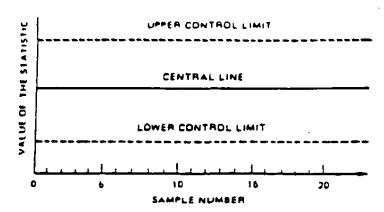


Figure 6-1. Essentials of a control chart.

There are many reference sources available that discuss in great detail the classic Shewhart control charts and related statistics that have since been developed for specific industrial applications (2-4). In addition, many authors have discussed applications of a related type of control chart called a cumulative-summation (cusum) chart (2,4). Rather than evaluating each sample independently, the cusum chart evaluates the cumulative trend of the statistics from a senes of samples. Because each successive point is based upon a cumulative data trend, cusum charts are often considered more effective than control charts in recognizing process changes and, therefore, may minimize losses from production of unacceptable units; however, cusum charts require the more difficult calculations, and optimally designed Shewhart techniques have been found to be almost as effective (2,4), so there is no universal agreement on the choice between them.

## 3.3 Applying Control Charts in Environmental Laboratories

In industrial applications, separate control charts are recommended for each product, each machine, and each operator. Analogous system variables in an environmental laboratory are the parameter, the instrument, and the analyst. However, environmental laboratories routinely have to contend with a variable that has no industrial counterpart—the true concentration level of the investigated parameter, which may vary considerably among samples. Unfortunately, the statistics that work well for industry are sensitive to the variability in true concentration that is common in environmental analysis; e.g., the classic  $\overline{X}$  and R statistic values increase substantially as concentration increases. This variability in true concentration means there are no expected values for randomly selected samples, so that the accuracy of testing methodology must be evaluated indirectly through the recovery of standards and spikes. As a result, it has been difficult for environmental laboratories to satisfactorily apply industrial QC techniques.

There are two possible approaches to the solution of the problem of variation in the true concentration level; either use of a statistic that is not sensitive to this variation or application of the industrial techniques within restricted concentration ranges. Obviously, the former should be preferred because it actually solves the problem and does not require the development and maintenance of a series of charts for each parameter.

## Quality Control Charts for Accuracy

Two replacements for the Shewhart  $\overline{X}$  control chart have been suggested for evaluating the recovery of a series of different standards or spikes. One of these, a cusum chart using the

square of the difference between the observed and true values, is described in an EPA Region VI QC manual (5). The other alternative uses the classic Shewhart technique to evaluate the percent recovery instead of  $\overline{X}$ . It is recommended that the percent recovery be calculated as

$$P = 100 \frac{\text{observed}}{\text{known}}$$

for standards, or

for recovery of spikes into natural water backgrounds. An example of the linear relationship between percent recovery and the known concentration of standards and spikes is demonstrated in the accuracy plots of a recent EPA method study report on analysis of mercury (6). Both approaches are being used on a daily basis by various environmental laboratories.

The data in table 6-1 were used in the EPA Region VI manual (5) to illustrate the development of a cusum chart. The actual data have been reordered here to appear in ascending order of the known values. Note that the mean and the range of the  $a_i^2$  values increase with increasing concentration level, and this violates a basic premise for acceptable control chart statistics. Because the percent recovery data do not show any such trend, it is the recommended control chart statistic for controlling accuracy.

From the data in table 6-1, a Shewhart control chart for percent recovery can be calculated in the following way:

Average percent recovery

$$\overline{P} = \frac{\sum_{i=1}^{23} P_i}{23}$$

$$= \frac{2.310}{23}$$

$$= 100.4$$

The standard deviation for percent recovery

$$S_{p} = \sqrt{\frac{\sum_{i=1}^{23} P_{i}^{2} - \left(\sum_{i=1}^{23} P_{i}\right)^{2}/23}{22}}$$

square of the difference between the observed and true values, is described in an EPA Region VI QC manual (5). The other alternative uses the classic Shewhart technique to evaluate the percent recovery instead of  $\overline{X}$ . It is recommended that the percent recovery be calculated as

$$P = 100 \frac{\text{observed}}{\text{known}}$$

tor standards, or

for recovery of spikes into natural water backgrounds. An example of the linear relationship between percent recovery and the known concentration of standards and spikes is demonstrated in the accuracy plots of a recent EPA method study report on analysis of mercury (6). Both approaches are being used on a daily basis by vanous environmental laboratories.

The data in table 6-1 were used in the EPA Region VI manual (5) to illustrate the development of a cusum chart. The actual data have been reordered here to appear in ascending order of the known values. Note that the mean and the range of the  $d_i^2$  values increase with increasing concentration level, and this violates a basic premise for acceptable control chart statistics. Because the percent recovery data do not show any such trend, it is the recommended control chart statistic for controlling accuracy.

From the data in table 6-1, a Shewhart control chart for percent recovery can be calculated in the following way:

Average percent recovery

$$\overline{P} = \frac{\sum_{i=1}^{33} P_i}{23}$$
$$= \frac{2.310}{23}$$
$$= 100.4$$

The standard deviation for percent recovery

$$S_{p} = \sqrt{\frac{\sum_{i=1}^{23} P_{i}^{2} - \left(\sum_{i=1}^{23} P_{i}\right)^{2}/23}{22}}$$

and the lower control limit becomes

The completed control chart is shown in figure 6-2.

Following normal procedures, the control chart must indicate the conditions under which it was developed; i.e., laboratory name, parameter, method of analysis, date of preparation, and any other information unique to the initializing data, such as range of concentration and identification of analysis). A control chart is not generally applicable under other conditions.

To verify the control chart, the initializing data should be checked to be sure that none of the values exceeds these new control limits. In addition, if its distribution is proper, about 68 percent of the initializing data should fall within the interval  $P = S_p$ . It has been suggested that the control chart is not valid if less than 50 percent of the initializing data falls within this interval.

In applying the control chart, either of the following two conditions would indicate an out-of-control situation:

- a. Any point beyond the control limits
- b. Seven successive points on the same side of the value  $\tilde{P}$  of the central line

When an out-of-control situation occurs, analyses must be stopped until the problem has been identified and resolved, after which the frequency should be increased for the next few percent-recovery QC checks. The problem and its solution must be documented, and all analyses since the last in-control point must be repeated or discarded.

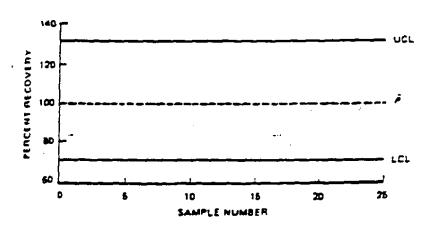


Figure 6-2. Shewhart control chart for percent recovery data.

A limit note of caution regarding use of a single percent-recovery P control chart over-a broad concentration range is necessary. As noted earlier for the analysis of mercury, a good linear relationship of the form

$$\overline{X} = P(known concentration) + K$$

where K is a constant, seems appropriate for many parameters. However, to justify use of a single percent-recovery control chart, K must be small enough relative to the P(known concentration) term that it has little or no practical effect upon the value of  $\overline{X}$ . This will usually be true for moderate or high concentration levels, but may not be true at very low concentration levels. As a result, for some parameters it may be necessary to develop a separate percent-recovery or Shewhart  $\overline{X}$  chart for each standardized low concentration level sample.

## Quality Control Charts for Precision

Because the characteristics of the range statistic change as concentration changes, two alternatives to Shewhart's R chart have been used in environmental laboratories to evaluate the precision of routine sample analyses.

One alternative is a cusum chart using the sum of the squared difference between duplicate determinations on randomly selected routine samples (5). Because the range R for duplicate analyses is equal to the difference between them, the cusum statistic equals the sum of squared ranges  $\sum R^2$ . However, if R changes significantly as concentration level changes, then  $R^2$  is affected even more and, therefore, is not as good a enterion for judging whether precision of the system is within acceptable limits.

The other alternative uses a chart similar to the R chart, but the chart statistic is either the percent relative standard deviation  $(100S/\overline{X})$ , the coefficient of variation (CV or  $S/\overline{X}$ ), or the industrial statistic I. For the duplicate determinations A and B, I equals the absolute value of their difference divided by their sum, or |A-B|/(A+B), and can be shown to be equivalent to the other two statistics:

$$100(CV) = 100 \frac{S}{X}$$

$$= 100 \frac{R/\sqrt{2}}{(A+B)/2}$$

$$= 100 \frac{2}{\sqrt{2}} \frac{R}{A+B}$$

$$= \frac{200}{\sqrt{2}} \frac{IA-BI}{A+B}$$

$$= \frac{200I}{\sqrt{2}} \frac{IA-BI}{A+B}$$

For the sake of computational ease, I seems to be a logical alternative to R.

The next concern is whether I is independent of changes in concentration level. Based upon expenence with duplicates on routine samples taken during the last 2 years by EPA Region VII, I appears to decrease substantially as concentration increases. In recognition of this possible dependency, control charts for I should only be developed from and applied to results within a limited concentration range. Note that control charts for R could be applied under similar limitations.

As an illustration of the concentration dependency of these precision statistics, table 6-2 provides estimates of R and I for different concentration ranges of three parameters. These parameters were selected because approximately 100 sets of duplicates were available that were well distributed over a reasonably broad concentration range. The ranges for the sum of duplicates A + B used in table 6-2 were selected because they were convenient and the data tended to be well distributed among them. Data judged to be out of control were discarded before any calculations were made.

Table 6-2 indicates the concentration dependence of both the range R and the industrial statistic I for these three parameters. Because I is not independent of concentration and is

Table 6-2
ESTIMATES OF THE RANGE (R = |A - B|) AND THE INDUSTRIAL STATISTIC |I = |A - B|/(A + B) OF THREE DIFFERENT PARAMETERS FOR VARIOUS CONCENTRATION RANGES!

Parameter	Range of A + B	No. of Sets of Duplicates	<sup>2</sup> A + B	<sup>2</sup> R	2/	
BOD, 5-day (mg/l)	2 10 <20	21	11.7	1.04	0.0888	
	20 to <50	° 30	35.2	1.94	0.0552	
	50 to <100	27	72.2	3.33	0.0462	
	100 to <300	29	204.1	6.52	0.0319	
	300 to <600	17	394.4	11.1	0.0282	
	600 to <b>&lt;</b> 2,000	12	1,041	12.1	0.0116	
	2,000 up	3	6,683	177	0.0264	
Chromium (µg/l)	10 to <20	32	12.3	0.32	0.0306	
	20 to <50	15	33.4	0.57	0.0170	
	50 to <100	16	72.4	1.12	0.0155	
	100 to <300	15	170.3	3.80	0.0223	
	300 to <1,000	8	480.3	5.25	0.0109	
	դա 000, I	5	6,340	76.0	0.0120	
Copper (µg/l)	10 to <30	16	22.2	0.93	0.0617	
	= 30 to <50	23	38.2	1.35	0.0368	
	50 to <100	21	70.8	1.14	0.0169	
	100 το <200	26	131.9	2.33	0.0177	
	200 to <400	10	268.0	2.81	0.0105	
· ·	400 up	3	702.0	4.56	0.0065	

<sup>&</sup>lt;sup>1</sup> From EPA Surveillance and Analysis Laboratory, Region VII.

<sup>&</sup>lt;sup>2</sup> Average values.

Tuble 6-3 also contains a critical range  $R_c$  column. Because the data from EPA Repon VII were almost always whole units with only a very occasional half unit reported, the  $R_c$  value is the UCL value rounded to the nearest whole unit at higher concentration levels and to the nearest half unit for the lowest concentration level. However, there is an exception to this mile among the low-concentration  $R_c$  values for copper that demonstrates an advantage beyond the simplicity of using such tables. The UCL value for copper at 25 to 50  $\mu$ g/I is meanwhent with the UCL values for adjacent concentration levels, and the  $R_c$  value has been adjusted to resolve this inconsistency. Without the table, such inconsistencies could very easily go unnoticed.

The examples in table 6-4 illustrate how to use the  $R_c$  values in table 6-3. This technique, consisting of the development and use of a table of critical-range  $R_c$  values at different concentration levels, is recommended to control precision. Normal control chart procedures should be followed as in section 6.3.1 regarding identification and verification of the table. The table should be updated periodically as additional, or more current, data become available, or whenever the basic analytical system undergoes a major change. If any difference between duplicate analyses exceeds the critical-range value for the appropriate concentration level, then analyses must be stopped until the problem is identified and resolved, and the frequency should be increased for the next few precision checks. After resolution, the problem and its solution must be documented, and all analyses since the last in-control check must be repeated or discarded.

Table 6-3
SHEWHART UPPER CONTROL LIMITS (UCL) AND CRITICAL RANGE R, VALUES FOR THE DIFFERENCES BETWEEN DUPLICATE ANALYSES WITHIN SPECIFIC CONCENTRATION RANGES FOR THREE PARAMETERS!

Parunieter	Concentration Range <sup>2</sup>	UCL	$\mathcal{R}_{\mathbf{r}}$	
BOD, S-day (mg/l)	1 to <10	3.40	3.5	
,	10 το <25	6.34	6	
	25 to <50	10.9	11	
	50 to <150	21.3	21	
	150 to <300	36.3	36	
	1,000 ن (1,000	39.6	140	
	1,000 чр	579	3 579	
Chromium (µg/l)	5 to <10 .	. 1.05	I	
	10 to <25	1.86	2	
	25 to <50	3.66	4	
	50 to <150	12.4	12	
	150 to <500	17.2	3 17	
	500 up	249	3 249	
Copper (µg/l)	5 10 <15	3.04	3	
	15 to <25	4.41	. 4	
	25 to <50	3.73	5	
	50 to <100	7.62	8	
	100 to <200	<sup>^</sup> 9.19	39	
	200 up	14.9	315	

<sup>1</sup> From EPA Surveillance and Analysis Laboratory, Region VII.

more difficult to calculate and develop control charts for, the use of R charts for a series of sequential concentration ranges for each parameter seems practical. However, because the primary concern when using any range chart is whether the upper control limit has been exceeded, an even more practical approach would be to develop a table of these limits for all concentration levels of each parameter. As an example, table 6-3 contains the calculated Shewhart upper control limits for the range R from duplicate analyses within the various concentration levels for the three parameters in table 6-2. These limits were calculated, as usual, from the Shewhart factor  $D_4$  for ranges based upon duplicate analyses and the appropriate average value of the range R given in table 6-2. For example, the UCL for 25 to 50 mg/l of BOD was calculated as follows:

UCL = 
$$D_4 R^7$$
  
= 3.27(3.33)  
= 10.9

<sup>&</sup>lt;sup>2</sup> Equal to half of the range of A + B given in table 6-2.

<sup>3</sup> Based on fewer than 15 sets of duplicate analyses.



## 3.1 <u>ACCURACY</u>

Accuracy is the degree of agreement of a measurement with a true value. Usually a parameter of a sample is determined by comparing the measurement on the sample with that on the standard(s). Therefore, the accuracy of a measurement is controlled by the standard(s) used. At RES (LA) lab, the working standards are prepared using either the reference materials which are the highest purity commercially available or the certified standard concentrates.

For certain parameters, the measurements can become inaccurate due to the loss of analytes during sample preparation or due to the presence of interfering materials during the measurements. The accuracy of a measurement is best assessed by adding a spike (an aliquot of standard solution) to an actual sample and then determining the percent recovery (P) of the spike.

P = 100 (observed - background) / spike

The mean and standard deviation of the recovery data will be compiled on a cumulative basis for spike of each parameter, which will then be used for constructing the quality control chart (see Subsection 12.2). Goals for accuracy as average percent recovery of spikes are summarized in Table 3-1. For pH and conductivity, it is not feasible to spike the sample, so the QC check samples for these parameters are analyzed for accuracy assessment.

## 3.2 PRECISION

Precision is a measure of mutual agreement among individual measurements of the same property. At RES (LA) Lab, precision is evaluated by the industrial statistic (I) of the duplicate determinations A and B of a sample for each parameter.

I = |A-B| / (A+B)

The average industrial statistic  $(\overline{1})$  of a minimum of 15 sets of duplicate analyses is used for constructing the quality control chart (see Subsection 10.1). Goals for precision as average industrial statistic of duplicate analyses are summarized in Table 3-1.

## 3.3 COMPLETENESS

The completeness objectives for this plan is to obtain valid analytical results for > 95 percent of the samples analyzed under normal conditions.

## 3.4 REPRESENTATIVENESS

The factors which affect the representativeness of samples (sampling procedures, sampling equipment, and sample preservation) are addressed in the "Sampling and Analysis Plan" of the "Ground-Water Monitoring Program".

## 3.5 COMPARABILITY

All data will be reported in units commonly used by the DEQ or the EPA.

TABLE 3-1
ACCURACY AND PRECISION OBJECTIVES

MERSUREMENT			ACCURACY					PRECISION			
PARAMETER (		Re	COVEZY)	_	(5tc.	Dev.	)	(five.	11.0	. Stä	tistic)
рн		> 9	8×	(	0.15	stc.	U7:17	(	0.10	sts.	uris t
Conductivity		) 3	10%	(	250	umhos		(	0.10		
Total Organic											-
Carbon (1-5 mg/1)		> 5	25%	(	: 5%			(	0.20		
(5-20 mg/1)		> 5	25%	(	10%			(	೧. ೮5		
Chlorice		) E	:5×	(	25%			(	0.02		
Iron		> 3	18%	(	10%	:		•	0.02		
Marigariese		) 9	18%	(	10%			(	0. 05		
Pnenols		> 5	90%	(	:5%			(	0.10		
Sec: um		> 5	82	(	10%			(	೦. ೧೨		
Sulfate	:	> 7	'5×	(	25%			. (	0.05		
Arsenic		> 5	27	(	20%			(	o. c5		
Barium		> 5	:=×	(	20%			٠.(	0.05		
Caomium		) 5	? <b>5</b> %	(	12%			<	0.05		
Chroms um		> 5	? <b>=</b> %	(		:		•	0. C5		
Lead		> 5	25%	(	10%			(	೦. ೧೮		
Mercury		) 3	25%	(	20%			(	0.05		
Selenium		> 5	?£%	(	20%			(	0.05		
Silver		> 5	82	<	10%			(	c. cs		

## SECTION 4

## CALIBRATION PROCEDURES AND FREQUENCY

pH meter, conductivity meter, total organic carbon analyzer, and atomic absorption spectrophotometer are calibrated each time they are used. The calibration procedures recommended by the corresponding EPA methods are followed.

Phenols or sulfate is measured by a spectrophotometer. Initially a standard curve is prepared by plotting the absorbance value of standards at a specific wavelength versus the corresponding phenol or sulfate concentrations. Each day, before any samples are run, one standard is checked against the most recent standard curve. The observed value must be within 10% of the true value. Otherwise, a new standard curve must be prepared.

The analytical balance is professionally cleaned and calibrated twice a year. Additional calibration checks are performed by laboratory personnel twice a month.

Calibration standards are prepared from the Standard Reference Materials or the certified standard solutions.

# Analytical Procedures

Procedures used for the analysis of samples are from U.S. EPA "Methods for Chemical Analysis of water and Waste", ENA 600/4-79-020, and SW-046, "Test Nethods for Evaluating Solid Waste - Physical/Chemical Nethods". A general description of the individual procedures are listed below. Specific procedures are maintained by the RES (IA) Jaboratory.

# PNWNEILIS

## REFERENCE NETHOD

# INCHEANIC NON-METALS

Nitrogen Ammonia - Potentiometric, Ion Selective Electrode Oxygen, Dissolved - Membrane Electrode/Modified Winkler Chloride - Titrimetric, Mercuric Nitrate Alkalinity - Titrimetric Sulfate - Turbidimetric Acidlly - Titrimetric Sulf ides Cyanide

360.1/360.2 310.1 325.3 350.3 375.4 9030 9010 Method Method Method Method Method Method Nethod 

Method

## OFFINES

EPA Method 405.1 Erya Erya Erya Erv<sup>a</sup> | Erva Oil and Grease, Total Recoverable - Gravimetric Separatory Phenolics, Total Recoverable - Spectrophotometric, Manual Biochemical Oxygen Denand - 5 day, 20°C 4-MP with Distillation Funnel Extraction Chemical Oxygen Demand Total Organic Halides Total Organic Carbon

Method 415.1/EFA Method 9060

Nethod 413.1

Method 420.1/EPA<sup>b</sup> Method 8040

Method 410.2; see Sec. 4.2.7

Nethod 9020

## CC-CC/HS

Dose/Neutrals and Acids Chlorinated Herbicides Purgeables - VOAs

EIY, Method B150 EIY, Method B240 EIY, Method 625

## PAIWHLTEDS

## ME.TVI.S

Arsenic - Atomic Absorption Method, Direct Aspiration
Darium - Atomic Absorption Method, Direct Aspiration
Cachmium - Atomic Absorption Method, Direct Aspiration
Chromium - Atomic Absorption Method, Direct Aspiration
Copper - Atomic Absorption Method, Direct Aspiration
Lead - Atomic Absorption Method, Direct Aspiration
Manganese - Atomic Absorption Method, Direct Aspiration
Mercury - Atomic Absorption Method, Cold Vapor Automated
Nickel - Atomic Absorption Method, Direct Aspiration
Selenium - Atomic Absorption Method, Direct Aspiration
Silver - Atomic Absorption Method, Direct Aspiration
Zinc - Atomic Absorption Method, Direct Aspiration
Sinc - Atomic Absorption Method, Direct Aspiration

# PINSICAL PROPERTIES

Conductance, Specific (uokms at 25°C)
pH
Residue
fillterable, gravimetric, dried @ 180°C
nonfilterable, gravimetric, dried @ 103-105°C
total, gravimetric, dried @ 103-105°C
volatile, gravimetric, ignition @ 550°C
Temperature - Thermometric

## INZARDOUS - INCPA

EP Toxicity Ignitability

# REPERENCE METRO

7470/7471 7420/742] 1760/7761 7130/713 7190/719 7210/721 7520/752] 1740/774 7060/706 7080/708 Methods 3010/3020/3030 Method 270.3/EPAD Method 270.3/EPAD Method 213.1/ $\mathrm{Er}\mathrm{A}_\mathrm{D}^\prime$  $219.1/E!v_6'$ Method 208.1/EPA Method 272.1/EPA Method 220.1/Fiv<sup>5</sup> Method 239.1/Eiv<sup>6</sup> Method 206.3/FPA Method 245.2/EPA Method 289,]/EPA Method 243.1 Method ELVa ELVa ELVa ELVa ELVa ELVa El'A<sup>a</sup> El'A<sup>a</sup> EPAª

EPA<sup>a</sup> Method 120.1 EPA<sup>a</sup> Method 150.1/EPA<sup>b</sup> 9040

EPA<sup>a</sup> Method 160.1 EPA<sup>a</sup> Method 160.2 EPA<sup>a</sup> Method 160.3 EPA<sup>a</sup> Method 160.4 EPA<sup>a</sup> Method 170.1 EPA<sup>b</sup> Nethod 1310 EFA<sup>b</sup> Nethod 1010/1020

## section 3

# Analytical Procedures

INTERNETICE NETTICE

## PAWMENTES

## MECELIANICALS

Heat of Combustion by Nallistic Exmb Calorimeter Mercuric Nitrate method Argentometric Method Specific Gravity or Bulk Density Flashpoint - Pensky-Martens Closed Cup Flashpoint - Setaflash Closed Cup Compatability Viscosity - Drookfield Thermosel System Expansion Factor, Density, And Flue Ash Ratio Paint Filter Test Reactivity with Kiln Dust Determination

See Sec. 4.2.1
EPA Method 325.3
See Sec. 4.2.2
EPA Std Method 227-210
EPA Method 1010
EPA Method 1020
See Sec. 4.2.3
See Sec. 4.2.4
See Sec. 4.2.4
See Sec. 4.2.5
EPA Method 9095

United States EPA "Methods for Chemical Analysis of Water And Waste". El'A-600/4-79-020 45 Note:

United States EPA "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods" SW 846 ٩

## PARMETERS

## REFERENCE NETHOD

See Sampling and Analytical Methodology EPA Method 325.3 See Sampling and Analytical Methodology

## MECELLANDORS

Heat of Combustion by Ballistic Bomb Calorimeter
Mercuric Nitrate method
Argentometric Method
Specific Gravity or Dulk Density
Flashpoint - Pensky-Martens Closed Cup
Flashpoint - Setaflash Closed Cup
Compatability
Viscosity - Drookfield Thermosel System
Expansion Factor, Density, And Flue Ash Ratio
Paint Filter Test
Reactivity with Kiln Dust Determination

EPA Std Method 227-210
EPA Method 1010
EPA Method 1020
See Sampling and Analytical Methodology
See Sampling and Analytical Methodology
See Sampling and Analytical Methodology
EPA Method 9095
See Sampling and Analytical Methodology

United States EPA "Methods for Chemical Analysis of Water And Waste", El'A-600/4-79-020 æ Notes

United States EPA "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods" SW 846 <u>م</u>

## SECTION 6

## DATA REDUCTION, VALIDATION, AND REPORTING

## E. 1 Calculations

mil calculations required to obtain analytical results will be "bouble-checked" by the lab technicians. Prior to reporting the analytical results, a reasonableness check will be applied to ascertain any obviously "out-of-line" results for re-analysis by the Lab Supervisor.

when all data are summarized, another check for analytical data reasonableness will be made by the Project Manager.

## E. 2 Laboratory Reports

It will be the responsibility of the Laboratory QR/QC Coordinator to present all of the analytical sample and quality control data to the Project Manager. The Laboratory DR/QC Coordinator must sign each batch of sample data before the data is used for reporting. All associated blank, standard, and QC data, along with analysis results for each batch of samples, will be reported.

Rejected data will be returned to the Laboratory DA/QC Coordinator. The rejected data will be checked for the reason for rejection, and, if an error is found, the DA/QC Coordinator will make the appropriate change and document the reason for change.

## SETTION 7

## INTERNAL QUALITY CONTROL CHECKS

With each tatch of analyses, the following tests are run:

- a. Drie blank on water and reapents
- Dre mispoint standard
- c. One spike to determine recovery
- c. One set of puplicate analysis

The result of b should be within 10% of the true value. Otherwise, the system has to be re-standardized. The results of c and d should be compared with previous ir-control data by using the quality control chart.

In applying the control chart, either of the following two conditions would indicate an out-of-control situation:

- + Any point beyond the control limits.
- Seven successive points on the same side of the central line (mean)
   for accuracy control chart only.

when an out-of-control situation occurs, analyses must be stopped until the problem has been identified and resolved. The problem and its solution must be documented, and all analyses since the last in-control point must be repeated or discarded.

## SECTION 8

## PERFORMANCE AND SYSTEMS AUDITS

The Project Manager and the Laboratory QA/QC Coordinator will frequently review all data for accuracy and completeness and to ensure that required QC checks are being made and protocols followed.

RES (LA) Lab regularly participates in the following external laboratory evaluation programs:

- a. EPA Performance Evaluation Audit Program
- b. Water and Wastewater Analysts Association Quality Assurance Program

The most recent certificates granted to RES (LA) Lab by the above programs are attached.

## SECTION 9

## PREVENTIVE MAINTENANCE

All analytical instruments are routinely cleaned in order to minimize downtime. These instruments are maintained either by manufacturers' service personnel or trained RES (LA) laboratory personnel.

## SECTION 10

SPECIFIC ROUTINE PROCEDURES USED TO ASSESSED DATA PRECISION, ACCURACY, AND COMPLETENESS

## 10.1 GUALITY CONTROL CHART FOR PRECISION

The Shewhart technique is applied to construct a control chart for the industrial statistic (I) as described below:

Average industrial statistic

 $\tilde{I} = \frac{\tilde{I}}{1}$  N = number of sets of duplicates

I-1-181 June 24, 1987 Upper control limit

$$UDL = D I = 3.27 I \qquad D = 3.27 \text{ for duplicates}$$

Upper warning limit

This UWL corresponds to the 95% confidence level. The control chart is shown in Figure 12-1.

## ID. 2 DUBLITY CONTROL CHART FOR ACCURACY

A Shewart control chart for percent recovery (Pi) is constructed in the following way:

premage percent recovery

The standard deviation for percent recovery

$$\sum_{i=1}^{n} \frac{n}{i} = \frac{2}{i} \frac{n}{i} = \frac{2}{n} \frac{2}{n}$$

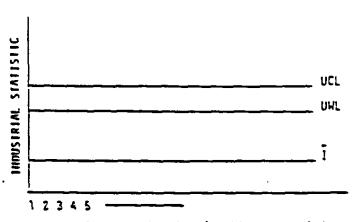
The upper control limit UCL & P + 35

The lower control limit - LCL o F - IS

The upper warning limit UWL = P + 25

The lower warning limit LWL o P = 25

) he control chart is shown in Figure 12-2.



Order of Results (duplicate sample sets)

FIGURE 12-1 SHEWHART CONTROL CHART FOR PRECISION

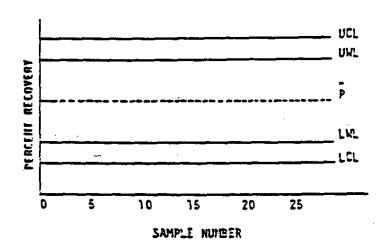


FIGURE 12-2 SHEWHART CONTROL CHART FOR ACCURACY

: :

EXHIBIT D-3

TCLP PROCEDURE

## EXHIBIT I-1-11

TCLP

I-1-282 June 24, 1987 Appendix 1 to Part 268—Toxicity Characteristic Leaching Procedure (TCLP)

### 1.0 SCOPE AND APPLICATION

- 1.1 The TCLP is designed to determine the mobility of both organic and inorganic contaminants present in liquid, solic, and multiphesic wastes.
- 1.2 If a total analysis of the waste demonstrates that individual contaminants are not present in the waste, or that they are present but at such low concentrations that the appropriate regulatory thresholds could not possibly be exceeded, the ECLP need not be run.

### 2.0 SUMMARY OF METHOD (see Figure 1)

- 2.1 For figurd wastes (i.e., those contaming insignificant solid material) the waste, after filtration through a 0.6- to 0.8-um glass fiber filter, is defined as the TCLP extract.
- 2.2 For wastes composed of solids or for wastes containing significant amounts of solid material, the particle-size of the waste is reduced (if necessary), the liquid phase of any, is separated from the solid phase and stored for later analysis. The solid phase is extracted with an amount of extraction fluid equal to 20 times the weight of the solid phase. The extraction fluid employed is a function of the alkalinity of the solid phase of the waste. A special extractor vessel is used when testing for volatiles (See Table 1). Following extraction, the liquid extract is separated from the solid phase by 0.8- to 0.8-um glass fiber filter filtration.
- 2.3 If compatible (i.e., multiple phases will not form on combination), the initial liquid phase of the waste is added to the liquid extract, and these liquids are analyzed together. If incompatible, the liquids are analyzed separately and the results are mathematically combined to yield a volume-weighted average concentration.

## 3.0 INTERFERENCES

3.1. Potential interferences that may be encountered during analysis are discussed in the individual analytical methods.

### 4.0 APPARATUS AND MATERIALS

4.1 Agitation apparatus: An acceptable agitation apparatus is one which is capable of rotating the extraction vessel in an endover-end fashion (See Figure 2) at 30  $\pm$  2 rpm. Suitable devices known to EPA are identified in Table 2.

## 4.2 Extraction Vessel:

4.2.1 Zero-Heedsonce Extraction Vessel (ZHE). This device is for use only when the waste is being tested for the mobility of volatile constituents (see Table 1). The ZHE is an extraction vessel that allows for liquid/solid separation within the device, and which effectively precludes headspace (as depicted in Figure 3). This type of vessel allows for initial hand/solid separation, extraction, and final extract filtration without having to open the vessel (see Step 4.3.1). These vessels shall have an internal volume of 500 to 600 mL and be equipped to accommodate a 90-mm filter. Suitable ZHE devices known to EPA are identified in Table 3. These devices contain

viton Orangs which should be replaced frequently.

For the ZHE in be acceptable for use, the piston within the ZHE should be able to the moved with approximately 15 psi or less. If it takes more pressure to move the piston, the Q-rings in the device should be replaced. If this does not solve the problem, the ZME is unacceptable for TCLP analyses and the manufacturer should be contacted.

The ZITE should be checked after every extraction. If the device contains a built-in pressure gause, pressurate the device to 50 ps. allow it to stand unattended for 1 hour, and recheck the pressure. If the device toes not have a built-in pressure aware pressurate the device to 50 ps. submerge it in water, and check for the presence of air hubbles escaping from any of the fittings. If pressure is lost, check all fittings and inspersion replace Orings, if necessary, Refers ton device. If leaking problems cannot be solved, the manufacturer should be contacted.

- 4.2.2. When the waste is being evaluated for other than voiattle contaminants, an extraction vessel that does not preclude headspace (c.c., a 2-liter bottle) is used. Sustable extraction vessels include bottles made from various muterials, depending on the contaminants to be analyzed and the nature of the waste (see Step 4.3.5). It is recommended that borosilicate glass bottles be used over other types of glass, especially when inorganics are of concern. Plastic bottles may be used only if inorganics are to be investigated. Bottles are available from a number of laboratory suppliers. When this type of extraction vessel is used, the filtration device discussed in Step 4.3.2 is used for initial liquid/solid separation and fittill extrect filtretion.
- 4.2.3 Some ZHEs use gas pressure to actuate the ZHE piston, white others use mechanical pressure (see Table 3). Whereas the volatiles procedure (see Section 9.0) refers to pounds-per-square inch (psi), for the mechanically actuated piston, the pressure applied is menaured in torque-inch-pitunds. Refer to the manufacturer's instructions as to the proper conversion.
- 4.3 Filtration Devices: It is recommended that all filtrations be performed in a bood.
- 4.3.1 Zero-Headspace Extractor Vessel (see Figure 3): When the waste is being evaluated for volatiles, the zero-headspinde extraction vessel is used for filtronon. The device shall be capable of supporting and keeping in place the glass fiber filter, and be able to withstand the pressure needed to accomplish separation (50 psil).

Note.—When it is suspected that the glass fiber filter has been ruptured, an in-line glass fiber filter may be used to filter the material within the ZHE.

4.2.2 Filter Holden. When the waste is being evaluated for other than volution compounds, a filter holder capable of supporting a giuse fiber filter and abin to withstand the pressure needed to accomplish separation is used. Suitable filter holders range from simple vacuum units to relatively complex systems capable of exerting pressures of up to 50 psi or more. The type of filter holder used depends on the properties of the material to be filtered (see Step 4.3.3)

These devices shall have a minimum internal solume of 300 mL and be equipped to accommodate a minimum filter size of 47 mm (Filter holders having an internal capito by of 1.5 L or greater and equipped to accommodate a 142 mm diameter filter are recommended). Vaccum tiltration is only recommended for wastes with low solids requirent (< 10°0) and for highly granular (figure-containing) wastes. All other types of wastes should be filtered using positive pressure filtration. Filter holders known to EPA to be suitable for use are shown in Table 4.

4.3.3. Materials of Construction:
Extraction vessels and filtration devices shall be made of mert materials which will not leach or absorb wasie components. Glass, polytetralluorpenylene (PTFE), or type 320 stainless steel equipment may be used when evaluating the mobility of both organic and morganic components. Devices made of high-density polyethylene (POPE), polypropylene, or polyethylene (POPE), polypropylene, or polyethylene the mobility of metals. Boroscheate glass bottles are recommended for ase over other types of glass bottles, especially when morganics are constituents of concern.

4.4 Filters: Filters shall be made of horosdicate glass fiber, shall contain no binder materials, and shall have an effective pore size of 0.6- to 0.8-um, or equation. Filters known to EPA to meet these specifications are identified in Tible 5. Probliters must not be used. When evaluating the mobility of metals, filters shall be acid-washed prior to use by rinsing with 1.0 N mins, and followed by three consecutive cases with denotized distilled water (a community of 1-L per rinse is recommended). Glass fiber filters are fragile and should be handled with care.

4.5 pH meters: Any of the community available pH meters are acceptable.

4.6 ZHE extract collection devices: TEDLAR' bags or glass, stainless steel or PIFE gas tight syringes are used to collect the initial liquid phase and the final extract of the waste when using the ZHE device. The devices listed are recommended for use under the following conditions:

4.6.1. If a waste contains an aqueous liquid phase or if a waste does not contain a significant amount of non-aqueous liquid (i.e., a, 1) of total waste), the TEDLAR! bus should be used to collect and combine the initial liquid and solid extract. The syringe is not recommended in these cases.

4.6.2 If a waste contains a significant amount of non-aqueous initial higher phase (i.m. > 1% of total waste), the syringe or the TEDI AR\* bag may be used for both the initial solid/liquid separation and the final extract filtration. However, analysts should use one or the other, not both.

4.6.3 If the waste contains no initial liquid phase (is 100% solid) or has no significant solid phase (is 100% liquid), either the TEDLAR\* bag or the syringe may be used. If the syringe is used, discard the first 5 ml, of liquid expressed from the device. The remaining aliquots are used for analysis.

4.7 ZHE extraction fluid transfer devices: Any device capable of transferring the extraction fluid into the ZHE without changing the nature of the extraction fluid is ecceptable (e.g., a constant displacement pump, a gas tight syringe, pressure filtration unit (See Step 4.3.2), or another ZITE device).

4.8 Laboratory balance: Any laboratory balance accurate to within ±0.07 grams may be used full weight measurements are to be within ±0.1 grams).

### 5.0 REAGENTS

5.1 Reagent water: Reagent water is defined as water in which an interferent is not observed at or above the method detection limit of the analyticis) of interest. For non-volutile extractions, ASTM Type II water, or equivalent meets the definition of reagent water. For volutile extractions, it is recommended that reagent water be generated by any of the following methods. Reagent water should be monitored periodically for impurities.

5.1.1 Reagent water for volutile extractions may be generated by passing tap water through a carbon filter bed containing about 500 grams of activated carbon (Calgon Carp., Piltrasorb-300 or equivalent).

5.1.2. A water purification system (Millipore Super-Q or equivalent) may also be used to generate reagent water for valuation extractions.

5.1.2 Reagent water for voluble extractions may also be prepared by boiling water for 15 minutes. Subsequently, while maintaining the water temperature at 90 ± 5°C, bubble a contuminant-free inert was (e.g., nitrogen) through the water for 1 boor. While still hot, transfer the water to a narrow-mouth screw-cap bottle under zero-headspace and seal with a Teffon-lined septum and cap.

5.2 1.0 N Hydrochloric acid (HCl) made from ACS reagent grade.

5.3 1.0 N Nitric acid (HNOs) made from ACS reagent grade:

5.4 1.0 N Sodium hydroxide (NaOH) made from ACS reagent grade.

5.5 Glacial acetic acid (HOAr) ACS rengent grade.

5.0 Extraction fluid:

5.6.1 Extraction fluid =1: This floid is made by adding 5.7 mL glacial HOAc to 500 mL of the appropriate water (see Step 5.1), adding 64.3 mL of 1.0 N NaOH, and diluting to a volume of 1 liter. When correctly prepared, the pH of this fluid will be 4.93 = 0.05.

5.8.2 Extraction fluid =2: This fluid is made by diluting 5.7 mL gladial HOAc with ASTM Type II water (see Step 5.1) to a volume of 1 liter. When correctly prepared, the pti of this fluid will be 2.88 = 0.05.

Note.—It is suggested that these extraction fluids be monitored frequently for impurities. The pH should be checked prior to use to ensure that these fluids are made up accurately.

5.7 Analytical standards shall be prepared according to the appropriate analytical method.

## 6.0 SAMPLE COLLECTION. PRESERVATION, AND HANDLING

5.1 All samples shall be collected using an appropriate sampling plan.

6.2 At least two separate representative samples of a waste should be collected. If volatile organics are of concern, a third sample should be collected. The first sample is used in several preliminary TCLP

evaluations (e.g., to determine the percent solids of the waste; to determine if the waste contains insignificant solids (i.e., the waste is its own extract after filtration); to determine if the solid portion of the waste requires particle-size reduction; and to determine which of the two extraction fluids are to be used for the non-volatile TCLP extraction of the waste). These preliminary evaluations are identified in Section 7.0. The second and, if required, third samples are extracted using the TCLP non-volatile procedure (Section 8.0) and volutile procedure (Section 9.0), respectively.

6.3 Preservatives shall not be added to samples.

6.4 Samples can be refrigerated unless refrigeration results in irreversible physical change to the woste (e.g., precipitation).

6.5 When the waste is to be evaluated for volatile contaminants, care should be taken to minimize the loss of volatiles. Samples shalf he taken and stored in a manner to prevent the loss of volatile contaminants. If possible, it is recommended that any necessary particle-size reduction should be conducted as the sample is being taken (See Step 8.5).

6.6 TCLP extracts should be prepared for analysis and analyzed as soon as possible following extraction. If they need to be stored, even for a short period of time, storage shall be a 4° C, and samples for volatiles analysis shall not be allowed to come into contact with the atmosphere (i.e. no headspace). See Section 10.0 (QA requirements) for acceptable sample and extract holding times.

### 7.0 PRELIMINARY TCLP EVALUATIONS

The preliminary TCLP evaluations are performed on a minimum 100 gram representative sample of waste that will not actually undergo TCLP extraction (designated as the first sample in Step 8.2). These evaluations include preliminary determination of the percent solids of the waste; determination of whether the waste contains insignificant solids, and is therefore, its own extract after filtration; determination of whether the solid portion of the waste requires particle-size reduction; and determination of which of the two extraction fluids are to be used for the non-volatile TCLP extraction of the waste.

7.1 Preliminary determination of percent solids: Percent solids is defined as that fraction of a waste sample (as a percentage of the total sample) from which no liquid may be forced out by an applied pressure, as described helow.

7.1.1 If the waste will obviously yield no free liquid when subjected to pressure filtration (i.e., is 100% solids) proceed to Step 7.4.

7.1.2 If the sample is liquid or multiphissic liquid/solid separation to make a preliminary determination of percent solids is required. This involves the filtration device described in Step 4.3.2 and is outlined in Steps 7.1.3 through 7.1.9.

7.1.3 Pre-weigh the filter and the container that will receive the filtrate.

7.3.4 Assemble the filter holder and filter following the manufacturer's instructions

I-1-284 June 24, 1987 Place the filter on the support screen and secure.

7.1.5 Weigh out a representative subsample of the waste [100 gram minimum] and record the weight.

7.1.6 Allow slurries to stand to permit the solid phase to settle. Wastes that settle sowly may be centrifuged prior to filtration. Centrifugation is to be used only as an aid to ditration. If used, the liquid should be decanted and filtered followed by filtration of the solid portion of the waste through the same filtration system.

7.1.7 Quantitatively transfer the waste sample to the filter holder (liquid and solid phases). If filtration of the waste at 4° C reduces the amount of expressed liquid over what would be expressed at room temperature then allow the sample to warm up to room temperature in the device before filtering.

Note.—If waste material (>1% of original sample weight) has obviously adhered to the container used to transfer the sample to the filtration apparatus, determine the weight of this residue and subtract it from the sample weight determined in Step 7.2.5 to determine the weight of the waste sample that will be filtered.

Gradually apply vacuum or gentle pressure of 1-10 psi, until air or pressurizing 24s moves through the filter. If this point is not reached under 10 psi, and if no additional liquid has passed through the filter in any 2-minute. inierval, slowly increase the pressure in 10psi increments to a maximum of 50 psi. After each incremental increase of 10-psi, if the pressurizing gas has not moved through the filter, and if no additional liquid has passed through the filter in any 2-minute interval. proceed to the next 10-psi increment. When the pressurizing gas begins to move through the filter, or when liquid flow has coused at 50 psi (i.e., filtration does not result in any additional filtrate within any 2-minute period), filtration is stopped.

Note.—Instantaneous application of high pressure can degrade the glass filter filter and may cause premature plugging.

7.1.8 The material in the filter holder is defined as the solid phase of the waste, and the filtrate is defined as the liquid phase.

Note.—Some wastes, such as oily wastes and some paint wastes, will obviously contain some material that appears to be a inquid. But even after applying vacuum or pressure filtration, as outlined in Step 2.1.7, this material may not filter. If this is the case, the material within the filtration device is defined as a solid. The original filter is not to be replaced with a fresh filter under any circumstances. Only one filter is used.

7.1.9 Determine the weight of the liquid phase by subtracting the weight of the filtrate container (See Step 7.1.3) from the total weight of the filtrate-filled container. The weight of the solid phase of the waste sample is determined by subtracting the weight of the liquid phase from the weight of the total waste sample, as determined in Step 7.1.5 or 7.1.7. Record the weight of the liquid and solid phases. Calculate the percent solids as follows:

Percent solids = Total weight of waste (Step 7.1.9)

Total weight of waste (Step 7.1.5 or 7.1.7)

7.2 Determination of whether waste is liquid or has insignificant amounts of solid material: If the sample obviously has a significant amount of solid material, the solid phase must be subjected to extraction: proceed to Step 7.3 to determine if the waste requires particle-size reduction (and to reduce particle-size if necessary). Determine whether the waste is liquid or has insignificant amounts of solid material (which need not undergo extraction) as follows.

7.2.1 Remove the solid phase and litter from the filtration apparatus.

7.2.2 Dry the litter and solid phase at 100 ± 20° C until two successive winghings yield the same value within ±1%. Record final weight.

Note.—Caution should be taken to insure that the subject solid will not flash upon heating, it is recommended that the drying oven be vented to a hood or appropriate device.

7.2.3 Calculate the percent dry solids as follows:

Weight of dry waste and filter- tared weight of friter
Percent: dry solids = Initial weight of waste (Step 7.3.5 or 7.3.1)

7.2.4 If the percent dry solids is less than 0.5%, consult Step 6.2 and proceed to Section 8.0 if non-volatiles in the waste are of concern, and to Section 9.0 if volatiles are of interest, in this case, the waste, after filtration is defined as the TCLP extract. If the percent dry solids is greater than or equal to 0.5%, and if the non-volutile TCLP is to be performed, return to the beginning of this Section (7.0) with a new representative waste sample, so that it can be determined if particle-size reduction is necessary (Step 7.3). and so that the appropriate extraction fluid may be determined (Step 7.4) on a fresh portion of the solid phase of the waste. If only the volatile TCLP is to be performed, see the Note in Step 7.4.

7.3 Determination of whether the wastes requires particle-size reduction (particle-size is reduced during this Step;: Using the solid portion of the waste, evaluate the solid for particle-size. If the solid has a surface area per gram of material equal to or greater than 3.1 cm 3, or is smaller than 1 cm in its narrowest dimension (e.g., is capable of passing through a 9.5-mm (0.375-inch) standard sieve), particle-size reduction is not required (proceed to Step 7.4). If the surface area is smaller or the particle-size larger than described above, the solid portion of the waste is prepared for extraction by crushing. cutting, or granding the waste to a surface aren or particle-size as described above.

Note.—Surface area requirements are meant for filamentous (c.g., paper, cloth) and similar waste materials. Actual measurement of surface area is not required; nor is it recommended.

7.4 Determination of appropriate extraction fluid: If the solid content is greater than or equal to 0.5% of the waste and if TCLP extraction for non-volatile constituents will take place (Section 8.0), determination of the appropriate fluid (Step 5.6) to use for the non-volatiles extraction is performed as follows.

Note.—TCLP extraction for volatile constituents entails using only extraction fluid #1 (Step 5.6.1). Therefore, if TCLP extraction for non-volatiles extraction is not required, proceed to section 9.0.

7.4.1 Weigh out a small subsample of the solid phase of the waste, reduce the solid (if necessary) to a particle-size of approximation in diameter or less, and transfer 5.0 grams of the solid phase of the waste to a 500-mL beaker of Erlenmeyer flask.

7.4.2 Add 96.5 ml, of reagent water (ASTM Type II) to the beaker, roser with a watchglass, and stir vigorously for 5 minutes using a magnetic stirrer. Measure and record the pl.1. If the pH is <.5.0, extraction fluid =1 is used. Proceed to Section 8.0.

7.4.3 If the pH from Step 7.4.2 is > 5.0, add 3.5 mL 1.0 N HCl, slurry briefly, cover with a watchglass, heat to 50 °C, and hold at 50 °C for 10 minutes.

7.4.4 Let the solution cool to room temperature and record the pH. If the pH is <.5.0, use extraction fluid =1. If the pH is <.5.0, use extraction fluid =2. Proceed to Section 8.0.

7.5 The sample of waste used for performance of this Section shall not be used any further. Other samples of the waste (see Step 6.2) should be employed for the Section 8.0 and 9.0 extractions.

8.0 PROCEDURE WHEN VOLATILES ARE NOT INVOLVED

Although a minimum sample size of 100 grams (solid and liquid phases) is required; a larger sample size may be more appropriate, depending on the solids content of the waste sample (percent solids, see Step 7.1), whether the initial liquid phase of the waste will be miscible with the aqueous extract of the solid, and whether inorganics, semicolattle organics, pesticides, and herbicides are all snalytes of concern. Enough solids should be generated for extraction such that the volume

of TCLP extract will be sufficient to support all of the analyses required. If the amount of extract generated by the performance of a single TCLP extraction will not be sufficient to perform all of the analyses to be conducted, it is recommended that more than one extraction be performed and that the extracts from each extraction be combined and then aliquoted for analysis.

0.1 If the waste will obviously visid noliquid when subjected to pressure filtration (i.e., is 100.4 solid, see Step 7.1), weigh out a representative subsample of the waste (100 gram menimum) and proceed to Seep 8.9

- 8.2—If the sample is liquid or mortiphistic, liquid; soil of separation is required. This involves the filtration device described in Step 4.3.2 and is outlined in Steps 8.3 to 8.8.
- 8.3 Pre-weigh the container that will receive the filtrate.
- #4 Assemble the filter holder and filter following the manufacturer's instructions. Place the filter on the support screen and secure. Acid wash the filter if evaluating the mobility of metals (See Step 4.4).

Note.—Acid washed filters may be used for all non-volatile extractions even when metals are not of concern.

- 8.5. Weigh out a representative subsample of the waste (110 gram minimum) and record the weight. If the waste was shown to contain < 0.5% dry solids (Step 7.2), the waste, after filtration is defined as the TCLP extract. Therefore, enough of the sample should be filtered so that the amount of filtered liquid will support all of the analyses required of the TCLP extract. For wastes containing 20.5% dry solids (Steps 7.1 or 7.2), use the percent solids information obtained in Step. 7.1 to determine the optimum sample size (100) gram minimum) for filtration. Enough solids should be generated after filtration to support the analyses to be performed on the FCLP extract.
- 8.6. Allow slurries to stand to permit the solid phase to settle. Wastes that settle slowly may be centrifuged prior to filtration. Centrifugation is to be used only as an aid to filtration. If used, the liquid should be decanted and filtered followed by filtration of the solid portion of the waste through the same filtration system.
- 8.7 Quantitatively transfer the waste sample floand and solid phases) to the filter holder (see Step 4.3.2). If filtration of the waste at 4. C reduces the amount of expressed hand over what would be expressed at room temperature, then allow the sample to warm up to room temperature in the device before filtering.

Note.—If waste material (> 1% of the original sample weight) has obviously adhered to the container used to transfer the sample to the fiftration apparatus, determine the weight of this residue and sample to from the sample weight determined in Step 6.5, to determine the weight of the waste sample that will be filtered.

Cradually apply vacuum or gentle pressure of 1-10 psi, until air or pressurizing gas moves through the filter. If this point is not reached under 10 psi, and if no additional liquid has passed through the filter in any 2-minute interval, slowly increase the pressure in 10-psi increments to maximum of 50 psi. After each incremental increase of 10 psi, if the

pressurizing gas has not moved through the filter, and if no additional liquid has passed through the filter in any 2-minute interval, proceed to the next 10-psi increment. When the pressurizing gas begins to move through the filter, or when the liquid flow has crassed at 50 psi (i.e., filtration does not result in any additional filtrate within a 2-minute period), filtration is stopped.

Note.—Instantaneous application of high pressure can degrade the gloss fiber filter and may cause premature plugging.

8.8. The material in the filter holder is defined as the solid phase of the waste, and the filtrate is defined as the liquid phase. Weigh the filtrate. The liquid phase may now be either analyzed (see Step 8.13) or stored at 4 °C until time of analysis.

Note.—Some wastes, such as only wastes and some paint wastes, will obviously contain some material that appears to be a liquid. But even after applying vacuum or pressure filtration, as outlined in Step 8.7, this material may not filter. If this is the case, the material within the filtration device defined as a solid and is carried through the extraction as a solid. The original filter is not to be replaced with a fresh filter under any circumstances. Only one the filter is used.

n.9. If the waste contains <0.5% dry solutions Step 7.2), proceed to Step 8.13. If the waste contains ≥0.5% dry solids (see Step 7.1 or 7.2), and if particle-size reduction of the solid was needed in Step 7.3, proceed to Step 8.10. If particle-size reduction was not required in Step 7.3, quantitatively transfer the solid material into the extractor vessel, including the filter used to separate the mittaliquid from the solid phase. Proceed to Step 8.13.

A.10. The solid portion of the waste is prepared for extraction by crushing, cutting, or grinding the waste to a surface area of particle-size as described in Step 7.3. When the surface area of particle-size has been appropriately altered, quantitatively transfer the solid material into the extractor vessel, including the filter used to separate the initial liquid from the solid phase.

Note.—Sieving of the waste through a sievethat is not Teffon coated should not be donedue to avoid possible contamination of the sample. Surface area requirements are means for filamentous (e.g., paper, cloth) and similar waste materials. Actual measurement of surface area is not recommended.

8.11 Determine the amount of extraction fluid to add to the extractor vessel as follows:

20 - % solids (Step 7.1) ≠ weight of waste filtered (Step 8.5 or 8.7)

Weight of extraction fluid =

100

Slowly add this amount of appropriate extraction fluid (see Step 7.4) to the extractor vessel. Close the extractor bottle tightly (it is recommended that Teflon tape be used to ensure a tight small, secure in rotary extractor device, and rotate at 30 m2 rpm for 18 x 2 hours. Ambient temperature (i.e., temperature of room in which extraction is to take place) shall be maintained at 22 m3 °C during the extraction period.

Note.—As agitation continues, pressure may build up within the extractor bottle for some types of wastes (e.g., limed or calcium carbonate containing waste may evolve gases such as carbon dioxide). To refuse excess pressure, the extractor bottle may be periodically opened (e.g., after 15 minutes, 30 minutes, and 1 hour) and vented into a bood.

- 8.12 Following the 18±2 hour extraction, the material in the extractor vessel is separated into its component liquid and solid phases by filtering through a new glass filter filter, as outlined in Step 8.7. For final filtration of the TCLP extract, the glass filter filter may be changed, if necessary, to faulitate filtration, Filter(s) shall be acadwashed (see Step 4.4) if evaluating the mobility of metals.
- 8.13 The TCLP extract is now prepared as follows:
- 8.13.1: If the waste contained no initial liquid phase, the filtered liquid material obtained from Step 8.12 is defined as the TCLP extract. Proceed to Step 8.14.

8.13.2 If compatible (e.g., multiple phoses will not result on combination), the filtered liquid resulting from Step 8.12 is combined with the initial liquid phase of the waste as

obtained in Step 8.7. This combined liquid is defined as the TCLP extract. Proceed to Step 8.14.

- 8.13.3 If the initial liquid phase of the waste, as obtained from Step 8.7, is not or may not be compatible with the filtered liquid resulting from Step 8.12, these liquids are not combined. These liquids, collectively defined as the TCLP extract, are analyzed separately, and the results are combined mathematically Proceed to Step 8.14.
- 8.14 Fullowing collection of the TCLP extract, it is recommended that the pH of the extract be recorded. The extract should be immediately aliquoted for analysis and properly preserved (metals aliquots must be acidified with nitric acid to pH <2: all other aliquots must be stored under refrigeration (4 °C) until analyzed). The TCLP extract shall he prepared and analyzed according to appropriate analytical methods. TCLP extracts to be analyzed for metals, other than mercury, shall be acid digested. If the individual phases are to be analyzed separately, determine the volume of the individual phases (to ±0.5%), conduct the appropriate analyses, and combine the results mathematically by using a simple volume-weighted average:

Final Analyte Concentration 
$$\frac{(V_1)(C_1) - (V_2)(C_3)}{V_1 + V_2}$$

I-1-286 June 24, 1987 where:

 $V_i =$ The volume of the first phase (L).

C:= The concentration of the conteminant of concern in the first phase (mg/L).

V<sub>2</sub> = The volume of the second phase (L).
C<sub>5</sub> = The concentration of the contaminant of concern in the second phase (mg/L).

8.15 The contaminant concentrations in the TCLP extract are compared with the thresholds identified in the appropriate regulations. Refer to Section 10.0 for quality assurance requirements.

90 PROCEDURE WHEN VOLATILES ARE INVOLVED

The ZHE device is used to obtain TCLP extracts for volatile analysis only. Extract resulting from the use of the ZHE shall not be used to evaluate the mobility of non-volatile analytes (e.g., metals, pesticides, etc.).

The ZHE device has approximately a 500-mL internal capacity. Although a minimum sample size of 100 grams was required in the Section 8.0 procedure, the ZHE can only accommodate a maximum of 25 grams of solid (defined as that fraction of a sample from which no liquid (additional) may be forced out by an applied pressure of 50 psi), due to the need to add an amount of extraction fluid equal to 20 times the weight of the solid phase.

The ZHE is charged with sample only once and the device is not opened until the final extract (of the solid) has been collected. Repeated fifting of the ZHE of obtain 25 grams of solid is not permitted. The initial filtrate should be weighed and then stored at 4 °C until either analyzed or recombined with the final extract of the solid.

Although the following procedure allows for particle-size reduction during the conduct of the procedure, this could result in the loss of volatile compounds. If possible (e.g., particle-size may be reduced easily by crumbling), particle-size reduction (See Step 9.2) should be conducted on the sample as it is being taken. If necessary, particle-size reduction may be conducted during the procedure.

In carrying out the following steps, do not allow the waste, the initial liquid phase, or the extract to be exposed to the atmosphere for any more time than is absolutely necessary. Any manipulation of these materials should be done when cold (4° C) to minimize loss of volatiles.

9.1 Pre-weigh the (evacuated) container which will receive the filtrate (Sec Step 4.6), and set aside. If using a TEDLAR bug, all liquid must be expressed from the device, whether it be for the initial or final liquid/solid separation, and an aliquot taken from the liquid in the bag, for analysis. The containers listed in Step 4.6 are recommended for use under the following conditions.

9.1.1 If a waste contains an aqueous liquid phase or if the waste does not contain a significant amount of non-aqueous liquid (i.e., <1% of total waste), the TEDLAR\* bag should be used to collect and combine the initial liquid and solid extract. The syringe is not recommended in these cases.

9.1.2 If a waste contains a significant amount of non-squeous initial liquid phase (i.e., >1% of total waste), the avringe or the TEDLAR\* bag may be used for both the

initial solid/liquid separation and the final extract filtration. However, analysis should use one or the other, not both.

9.1.3 If the waste contains no initial liquid phase (is 100% solid) or has no significant solid phase (is 100% liquid), either the TEDLAR\* bag or the syringe may be used. If the syringe is used, discard the first 5 mL liquid expressed from the device. The remaining aliquots are used for analysis.

9.2 Place the ZHE piston within the body of the ZHE (it may be helpful first to moisten the piston O-rings slightly with estruction fluid). Adjust the piston within the ZHE body to a height that will minimize the distance the piston will have to move once the ZHE is charged with sample [based upon sample size requirements determined from Section 9.0. Step 7.1 and/or 7.2]. Secure the gas inlet/outlet flange (bottom flange) onto the ZHE body in accordance with the manufacturer's instructions. Secure the glass fiber filter between the support screens and set aside. Set liquid inlet/outlet flange (top flange) uside.

9.3 If the waste is 100% solid (see Step. 7.1), weigh out a representative subsample (25 gram maximum) of the waste, record weight, and proceed to Step 9.5.

9.4 If the waste was shown to contain <0.5% dry solids (Step 7.2), the waste, after filtration is defined as the TCLP extract. Enough of the sample should be filtered so that the amount of filtered liquid will support all of the volatile analyses required. For wastes containing >0.5% dry solids (Steps 7.1 and/or 7.2), use the percent solids information obtained in Step 7.1 to determine the optimum sample size to charge into the ZHE. The appropriate sample size recommended is as follows:

9.4.1 For wastes containing <5% solids (see Step 7.1), weigh out a representative 500 gram sample or waste and record the weight.

9.4.2 For wastes containing > 5% solids (see Step 7.1), the amount of waste to charge into the ZHE is determined as follows:

Weigh out a representative subsample of the waste of the appropriate size and record the weight.

9.5 If particle-size reduction of the solid portion of the waste was required in Step 7.3, proceed to Step 9.6. If particle-size reduction was not required in Step 7.3, proceed to Step 8.7.

9.6 The waste is prepared for extraction by crushing, cutting, or grinding the solid portion of the waste to a surface area or particle-size as described in Step 7.3. Wastes and appropriate reduction equipment should be refrigerated, if possible, to 4 °C prior to particle-size reduction. The means used to effect particle-size reduction must not generate heat in and of itself. If reduction of the solid phase of the waste is necessary, exposure of the waste to the atmosphere should be avoided to the extent possible.

Note.—Sieving of the waste is not recommended due to the possibility that volatiles may be lost. The use of an appropriately graduated ruler is recommended as an acceptable alternative Surface area requirements are meant for filamentous (e.g., paper, cloth) and similar waste materials. Actual measurement of importance area is not recommended.

When the surface area or particle-size has been appropriately altered, proceed to Step 9.7.

9.7 Waste slurries need not be allowed to stand to permit the solid phase to settle. Wastes that settle slowly shall not be centrifuged prior to filtration.

9.8 Quantitatively transfer the entire sample (figure and solid phases) quickly to the ZHE. Secure the filter and support screens into the top flange of the device and secure the top flange to the ZHE body in accordance with the manufacturer's instructions. Tighten all ZHE fittings and place the device in the vertical position (gas inlet/outlet frange on the bottom). Do not attach the extraction collection device to the top plate.

Note.—If waste material (>1% of original sample weight) has obviously adhered to the container used to transfer the sample to the ZHE, determine the weight of this residue and subtract it from the sample weight determined in Step 9.4, to determine the weight of the waste sample that will be filtered.

Attach a gas line to the gas inlet/outlet valve (bottom frange) and, with the liquid inlet/outlet valve (top flange) open, begin applying gentle pressure of 1-10 psi (or more if necessary) to force all headspace (into a hood) slowly out of the ZHE device. At the first appearance of liquid from the liquid inlet/outlet valve, quickly close the valve and discontinue pressure. If filtration of the waste #1.4°C reduces the amount of expressed liquid over what would be expressed at room temperature, then allow the sample to warm up to room temperature in the device before filtering. If the waste is 100% solid (see Step 7.1), slowly increase the pressure to a maximum of 50 psi to force most of the headspace out of the device and proceed to Step 9.12.

9.9 Attach the evacuated pre-weighed filtrate collection container to the liquid inlet/outlet valve and open the valve. Begin applying gentle pressure of 1-10 psi to force the liquid phase into the filtrate collection container. If no additional liquid has passed through the fitter in any 2-minute interval. slowly increase the pressure in 10-psi increments to a maximum of 50 psi. After each incremental increase of 10 pai, if no additional liquid has passed through the filter in any 2-minute interval, proceed to the next 10-psi increment. When liquid flow has ceased such that continued pressure filtration at 50 psi does not result in any additional. filtrate within any 2-minute period, filtration is stopped. Close the liquid inlet/outlet valve. discontinue pressure to the piston, and disconnect the filtrate collection container.

Note.—Instituteneous application of high pressure can degrade the glass fiber filter and may cause premature plugging.

I-1-287 June 24, 1987 4.10. The material in the ZHE is defined as the solid phase of the waste and the filtrate is defined as the liquid phase.

Note.—Some wastes, such as only wastes and some paint wastes, will obviously contain some material that appears to be a liquid. But even after applying pressure filtration, this material will not filter if this is the case, the material within the filtration device is defined as a solid and is carried through the TCLP extraction as a solid.

If the original waste contained < 0.5°1 dry solids (see Step 7.2), this filtrate is defined as the TCLP extract and is analyzed directly Proceed to Step 9.15.

9.11 The liquid phase may now be either analyzed immediately (see Steps 9.13 through 9.15) or stored at 4 °C under minimal headspace conditions until time of analysis. The weight of extraction fluid =1 to add to the ZHE is determined as follows:

Weight of extraction fluid

204 solids (Step 7.1) × weight of waste filtered (Step 94 or 9.8)

100

9.12 The following steps detail how to add the appropriate amount of extraction fluid to the solid material within the ZHE and agitation of the ZHE vessel. Extraction fluid #1 is used in all cases (see Step 5.6).

9.12.1 With the ZHE in the vertical position, attach a line from the extraction fluid reservior to the liquid inlet/outlet valve. The line used shall contain fresh extraction finid and should be preflushed with fluid to eliminate any air pockets in the line. Release gas prossure on the ZHE piston (from the gas inlet/outlet valve, and begin transferring extraction fluid (by pumping or similar means) into the ZHE. Continue pumping extraction fluid into the ZHE until the appropriate amount of fluid has been introduced into the device.

9.12.2. After the extraction fluid has been added, immediately close the hand inlet/ neiter valve and disconnect the extraction fluid line. Check the ZHE to ensure that all valves are in their closed positions. Physically rotate the device in an end-overend fashion 2 or 3 times. Reposition the ZHE in the vertical position with the liquid inlet/ outlet valve on top. Put 5-10 psi behind the piston (if necessary) and slowly open the liquid injet/putlet valve to bleed out any headspace (into a hood) that may have been introduced due to the addition of extraction. fluid. This bleeding shall be done quickly and shall be stopped at the first appearance of liquid from the valve. Re-pressurize the ZHE with 5-10 psi and check all ZHE fittings to ensure that they are closed.

9.12.3 Place the ZHE in the rotary extractor apparatus (if it is not aiready there) and rotate the ZHE at 30±2 rpm for 18±2 hours. Anthent temperature (i.e., temperature of room in which extraction is to occur) shall be mortagoid at 22 = 3.10 decrease autition.

be maintained at 22.2.3 °C during agitation.

9.13 Following the 18.2.2 hour agitation period, theck the pressure behind the ZHE piston by quickly opening and closing the gas inlet/outlet valve and noting the escape of gas. If the pressure has not been maintained (i.m., no gas release observed), the device is leaking. Check the ZHE for leaking as specified in Stop 4.2.1, and redo the extraction with a new sample of waste. If the pressure within the device has been maintained, the material in the extractor vossel is once again separated into its component liquid and solid phases. If the waste contained an initial liquid phase, the

liquid may be filtered directly into the same filtrate collection container (i.e., TEDLAR\* bag) holding the initial liquid phase of the waste, unless doing so would create multiple phases, or unless there is not enough volume left within the filtrate collection container. A separate filtrate collection container must be used in these cases. Filter through the glass fiber filter, using the ZHE device as discussed in Step 9.9. All extract shall be filtered and collected in the TEDLAR\* bag is used, if the extract is multiphasic, or if the waste contained an initial liquid phase (see Steps 4.6 and 9.1).

Note.—An in-line glass fiber filter may be used in filter the material within the ZHE when it is suspected that the glass fiber filter has been ruptured.

9.14 If the original waste contained no initial liumd phase, the filtered liquid material nitiatined from Step 9.13 is defined as the TCLP extract. If the waste contained in initial liquid phase, the filtered liquid material obtained from Step 9.13 and the initial liquid phase (Step 9.9) are dollectively defined as the TCLP extract.

9.15 Following collection of the TCLP extract, the extract should be immediately aliquoted for analysis and stored with minimal headspace at 4 °C until analyzed. The TCLP extract will be prepared and analyzed according to the appropriate analytical methods, if the individual phases are to be analyzed separately (i.e., are not miscible), determine the volume of the individual phases (to ±0.5%), conduct the appropriate analyses, and combine the results mathematically by using a simple volume-weighted average:

Final Analyte Concentration  $= \frac{\{V_i\}\{C_i\} + \{V_i\}\{C_i\}}{\{V_i + V_i\}}$ 

where:

V<sub>1</sub> = The volume of the first phases (i.).
 C<sub>2</sub> = The concentration of the contaminant of concern in the first phase (mg/l.)
 V<sub>4</sub> = The volume of the second phase (i.).
 C<sub>2</sub> = The concentration of the contaminant of concern in the second phase (mg/l.).

9.16. The contaminant concentrations in the TCLP extract are compared with the thresholds identified in the appropriate regulations. Refer to Section 10.0 for qualify assurance requirements. 10.0 QUALITY ASSURANCE REQUIREMENTS

10.1 All data, including quality assurance data, should be maintained and available for reference or inspection.

10.2 A minimum of one blank textraction fluid =1) for every 10 extractions that have been conducted in an extraction vessel shall be employed as a check to determine if any memory effects from the extraction equipment are occurring.

10.3 For each analytical batch (up to twenty samples), it is recommended that a matrix spike be performed. Addition of matrix spikes should occur once the TCLP extract has been generated (i.e., should not occur prior to performance of the TCLP procedure). The purpose of the matrix spike is to monitor the adequacy of the analytical methods used on the TCLP extract and for determining if matrix interferences exist in analytic detection.

10.4 All quality control measures described in the appropriate analytical methods shall be followed.

10.5 The method of standard addition shall be employed for each analyte if: 1) recovery of the compound from the TCLP extract is not between 50 and 150%, or 2) if the concentration of the constituent measured in the extract is within 20% of the appropriate regulatory threshold. If more than one extraction is being run on samples of the same waste (up to twently samples), the method of standard addition need be applied only once and the percent recoveries applied to the remainder of the extractions.

10.6 Samples must undergo TCLP extraction within the following time period after sample receipt: Volatiles, 14 days; Semi-Volatiles, 40 days; Mercury, 28 days; and other Metals, 180 days. Extraction of the solid portion of the waste should be initiated as soon as prossible following initial solid/liquid separation. TCLP extracts shall be analyzed after generation and preservation within the following periods: Volatiles, 14 days, Semi-Volatiles, 40 days; Mercury, 28 days, and other Metals, 180 days.

TABLE 1 -- VOLATILE CONTAMINANTS

Compound	CAS No
Audione	67.64
militari arcono.	71-3e e
Carnon assumide	
Carnon retrachionor	5e-2-1
Charpoentenn .	*C#-93
Meinviene chionge	75-09-7
Beriches estima sestame	TA-9U-U
Methyl isnouthl velone	104.10
Les achigranthyietsi	1 Table 4
Touene	signar 5
1.1.1-Trichloroelhane	71.55 é
Tricmorperhisene	*C.,** .e
Trichorphysiomenane	د سید وج
Name	1337-20

Includes compounds dentitied in the Land Disposal Researching flue in any or as on these compounds for the concern the zero-freeding executive research in the zero-freeding compounds are of concern the zero-freeding both

I-1-288 June 24, 1987

)	2.—SUITABLE ROTAF APPARATUS 1	(T AGII KIIO~
Compa	- Location	Moder
Associated ( and Manufacts Company	(703) 549-5999	Guester device &
Lars Laride Mantectur	1	10-m ism devce
and Lador MA Machine	aton ( 1809) 752-4004	IS-resid core
EBRI EIHAC REXNORD	Miresusee, WI (414) 643-7850	6-vesser device

# TABLE 2.—SUITABLE ROTARY AGITATION APPARATUS !—Continued

Company	: Location	M-5284
Analytical Tasling and Consulting Services Inc	Warrington PA (215) 343-4430	   alvesse colore  -

1 Any device their intates the extraction vesses in an endover-end testion at 30 t 2 rpm is acceptable. If Although this period is surface it is not commerciative made. It may and require retruiting to accommutate ZPE periods.

TABLE 3 -SUITABLE ZERO-MEROSPACE EXTRACTOR VESSELS

Company	(SCB1107	M258- N5
sociated Chaugh & Menutacturing College Corp and Security Corp and Security Services, Inc.	Alexantria, VA. (703) 549-5999 Budturd, MA. (800) 725-3384 Warrington, PA. (215) 343-4490	0199-2mB Gas Pressure Device 550 Phot CS Gas Pressure Device CO2 Mechanical Pressure Device

#### TABLE 4 - SUITABLE FILTER HOLDERS "

Company	l	Location	1	Model	S.2+
	Pleasamon, CA, (800) 882-7711	·		425910 410400	
to Ferration Systems	Duolin, CA (415) 828-6010 Beators, MA. (800) 225-3384			302400 YT3014244 XX1004700	

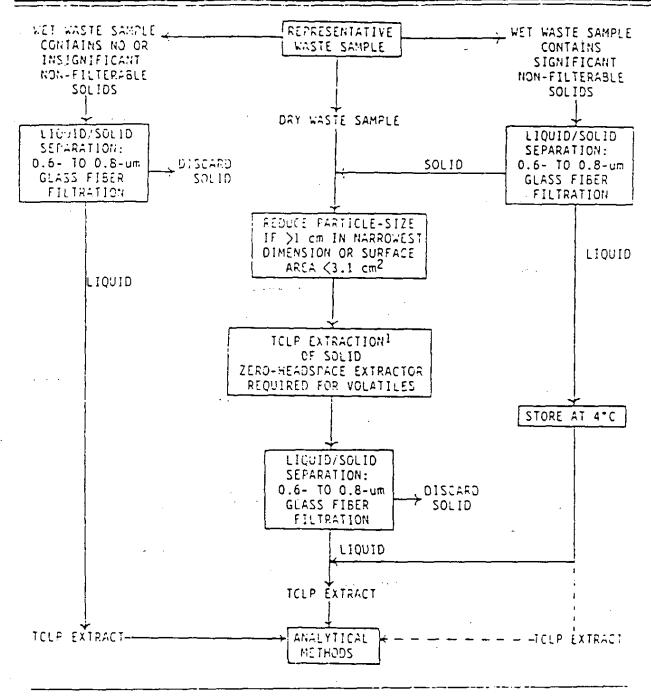
I are device capable of separating the liquid from the solid phase of the weste is suitable, providing that if is chemically compatible with the waste and the constituents to be analyzed stic devices (not listed above) may be used when only inorganic contaminants are of concern. The 142 mm size lister holder is recommended.

# TABLE S.-SUITABLE FILTER MEDIA

Company '	Location	Mode	, Pore
elony Products, inc	Cirpon NJ, (201) 773-5800	GFF	! -ò;
Normal pore Sze.			

LING CODE 6560-50-M

I-1-289 June 24, 1987



1The extraction fluid employed is a function of the alkalinity of the solid phase of the waste.

FIGURE 1: TOLP FLOWCHARD

I-1-290 June 24, 1987

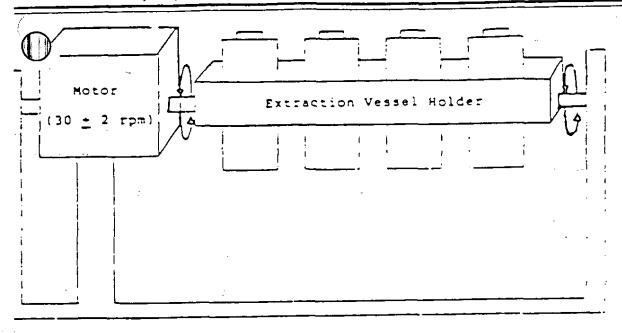
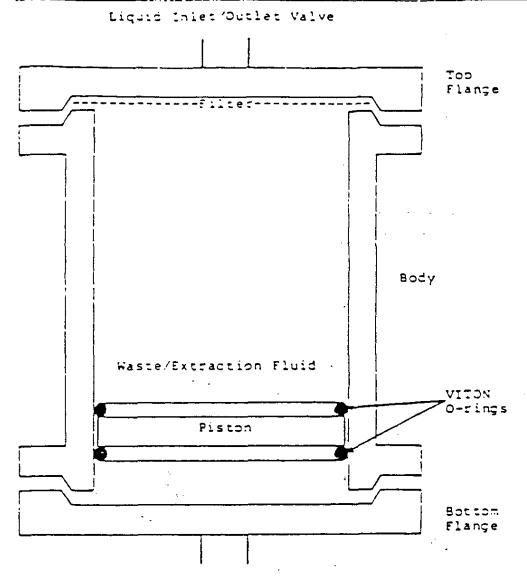


Figure 2: Rotary Acitation

COOE 4540-50-C



Pressurizing Gas Inlet/Outlet Valve

Figure 3: Zero-Headspace Extraction Vessel

I-1-292 June 24, 1987 APPENDIX II TO PART 268—TREATMENT STANDARDS (AS CONCENTRATIONS IN THE TREATMENT RESIDUAL EXTRACT)

the treatment standards. They are not required to be used in meeting the treatment standards.)

	Waste Treatability Groups For FDO1-FDO5 Spent Solvent Wasters (mg/										
Considurents of FOO1-FOO5 Speni Solvent Wastes	. Wastewater	Technology Basis <sup>1</sup>	Wastewater Generated by Pharmacouncal Plant 1	All Other *							
etore	0.05	ss	<u> </u>	C 55							
Suite Aicohol	5.00	! <b>S</b> S		5 00							
rach disultide	1 05	I SS	ļ.,	4 51							
rbon tetrachionide	0.05	i 8		0.96							
propertiene	0 15	84 AC	\$	0.05							
estra itresved acidi	2.82	AC	ļ.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.75							
	0 125	: SS		0.75							
Dichipropenzene	0.65	B&AC		0 12							
- acetate	0.05	! SS		0.75							
-/IDe-rene	. 0.05	i B		0 D							
hui etner	. 0.05	¹ <b>\$\$</b>		C 75							
Pulandi	5 00	I \$\$		5.00							
rmanol	0.25	SS	i	0 75							
ethylene Chlonda	0 20	B	j 12. j	0.96							
thy ether serone	: 0.05	¹ \$\$	ļ	0.75							
C'her reptule' selphe	. 0.05	: SS		0 3:							
ropenzene	. ₽66	I SS&AC	,	D 12							
maine	. 1 12	i B&AC		0 33							
PRECIONORIEMENT	, 0.079	: B		6.05							
	1 12	B&AC	<u> </u>	0.33							
1-Tremproemane		\$\$	ļ	0.4							
2-Trichioro-1.2.2-Influoroethana	1 05	l ss	. <del>[</del>	D 94							
Chloroethylene	0 062	BEAC		0.04							
chlorof-porpring (1474)		B									
47	0.05	i ac		0 13							

t in some instances other technologies achieved somewhat lower treatment values but waste characterization data influent to genitify separate treatability groups. Refer to the SUAT background document for a detailed explanation of termination of the treatment standards.

# PART 270-EPA-ADMINISTERED PERMIT PROGRAMS; THE HAZARDOUS WASTE PERMIT PROGRAM

VIII. In Part 270:

1. The authority citation for Part 270 continues to read as follows:

Authofity: Secs. 1006, 2002, 3005, 3007, 3019 and 7004 of the Solid Waste Disposal Act. as mended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 4905, 6912, 6925, 6927, 6939 and 6974), unless therwise noted.

#### Subpart B—Permit Applications

2. In § 270.14, paragraph (b)(21) is idded to read as follows:

: 270.14 Contents of Part B: General requirements.

(b) · · ·

(21) For land disposal facilities, if a ase-by-case extension has been approved under \$ 268.5 or a petition has een approved under § 268.6. a copy of he notice of approval for the extension ir petition is required.

# Subpart C-Permit Conditions

 In § 270.32, paragraph (b)(1) is: revised to read as follows:

# § 270.32 Establishing permit conditions.

(b)(1) Each RCRA permit shall include permit conditions necessary to achieve compliance with the Act and regulations, including each of the applicable requirements specified in Parts 264 and 266 through 268 of this chapter. In satisfying this provision, the Administrator may incorporate applicable requirements of Parts 264 and 266 through 268 of this chapter directly into the permit or establish other permit conditions that are based on these parts.

#### Subpart D-Changes to Permits

4. In § 270.42, paragraph (o) is added to read as follows:

# § 270.42 Minor modifications of permits.

- (o) Allow treatment of hazardous wastes not previously specified in the permit if:
- (1) The hazardous waste has been prohibited from one or more methods of land disposal under Part 268 Subpart C and treatment standards have been established under Part 268 Subpart D:

- (2) Treatment is in accordance with the standards established under § 268.41, or a variance established unde § 268.44 of this part:
- (3) Handling and treatment of the restricted waste will not present risks substantially different from those of wastes listed in the permit; and
- (4) Federal or State approval of a minor permit modification request is granted. No permit changes can occurexcept for the addition of new waste codes and administrative or technical changes necessary to handle new wastes. Changes in treatment processes or physical equipment may not be made under this paragraph.

# PART 271—REQUIREMENTS FOR **AUTHORIZATION OF STATE** HAZARDOUS WASTE PROGRAMS

IX. In Part 271:

1. The authority citation for Part 271 continues to read as follows:

Authority: Sens. 1006, 2002(a) and 3006 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended (42 U.S.C. 6905, 6912(a), and

#### Subpart A—Requirements for Final Authorization

In § 271.1 paragraph (j) is amended by adding the following entry to Table 1 in chronological order by the date of publication.

## § 271.1 Purpose and scope.

(j) · · ·

TABLE 1 .- REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMEND-**MENTS OF 1984** 

Date of promulgation	Time of requisition	Federal Register reterance	Effective date						
	•		. • .						
Cale of	Lend	51 FR	Nov 8 1986						
<b>DUDNESTON</b>	Disposer	(mpert							
of the hoad	Resinc-	Federal							
rues on the	Bons for	Register.							
Federal	BOINGINE	9404							
Register)	and dicums	(aredons)							

3. In § 271.1 paragraph (j) is further amended by adding the date of publication and the Federal Register page numbers to the following entry in Table 2.

### § 271.1 Purpose and scope.

()...

I-1-293 June 24, 1987

SS = steam stripoing B = biological treatment AC = scrivated carbon

<sup>-</sup> survision cardon assewaters generated by pharmaceutical pients must be treated to the standards given for all other wastew case of methylene chloride

the case of methylene chloride.

The treatment standards in this treatability group are based on momentum.

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZAROOUS AND SOLID WASTE AMEND-MENTS OF 1984

			•
[ Min; live date	browned Period Peri	6+ 0A C-14 - 0P	Frequent Recycles relationCP
	•		•
Aur. 8 1986	cand consonal profes- sors on doi ms and F001- F095 spennis	300	(munt date gri patroca- nert 51 (A (munt hypera higher page numbers)

ITR Doc. 86-25724 Filed 11-446; 8.45 amf BILLING CODE 6560-50-4

# EXHIBIT I-1-12

TABLE CCWE

I-1-295 June 24, 1987

# TABLE COWE-CONSTITUENT IN WASTE EXTRACT

	Concentration (in mg/f)								
FOOT—FOOS spans solvents	SOLVEULS CONTRACTOR MESTORISTORS MESTORISTORS	All Officer SOUTH PRINCES WESTER							
ACRIOFR	C 03	0.50							
midum acono	50	5.0							
CArbon Desirios	101	4 61							
Carbon tetrachicride	05	94							
Chloroperizane	15	05							
Cresors land cresyric acid1	2 67	75							
Cropperanone	.125	.75							
1,2-acharopentens	.85	.125							
Ethyl acetele	.0\$	.75							
Elitro benzone		.053							
Eime eiher	05	.73							
fedbula/fol	50	50							
PRINTER	25	7.							
Mathylene cmonde	20	96							
Metrylene chiange than the pher-									
mecaulical industry	12 7	96							
Methyl ethyl selond	0.25	6.75							
Mathyl Hoount selone	0.05	0.33							
hurroperizene	0.66	0.125							
Pyrione	112	0.33							
Tetracruoroethylene	0 079	0 05							
Toware	1.12	Q.33							
1.1.1-Tromorgemene	1 05	0 41							
1,2,2-Trichloro-1,2,2-Influraethane	1 05	0.96							
Tremproeinviene	0.062	0.091							
Trichiorollucromeinane	0.05	0 %6							
Zyme	0.05	0.15							

F020-F023 and F026-F028 diction companing wastes	Concentre- son					
HeCCO-AR Hexachtoroogenzo-o-organa	< 1 000					
MiCOF—All Helischloropioenzolurani	< 1 pgo					
PeCCO All Perried Horodoperizo-p-digiting	< 1 000					
PeCDF-All Perfectionogenzoheans	< 1 000					
TCCD-All Terromorooperto-o-oozers	< 1 poo					
TCDF-AFTerracmorod-benzorurans						
Z.4.5-Tromprophenoi						
2.4.6-Trichiorophenox						
2.3 4 6-Telfechiorophenoi						
Pentachtonena						

# ATTACHMENT E GROUNDWATER MONITORING PLAN

# ATTACHMENT E

# GROUNDWATER MONITORING PLAN

# Table of Contents

I.	PURPOS	Е						٠			 	 		 	 ٠.	• •	 •
II.	MONITO	RING	PLAN		·						 	 	• •	 	 ٠.		
List of Exhibits																	
Exhib	oit E-1	Well (	Constru	ction	Deta	ails											

# ATTACHMENT E

# GROUNDWATER MONITORING PLAN

### I. PURPOSE

The purpose of this Groundwater Monitoring Plan for RES(LA) is to provide documentation that its groundwater monitoring system is capable of complying with the requirements of Subchapter E of Chapter 43 of LAC 33:V. during the closure and post-closure period of Landfill Cell 717.

# II. MONITORING PLAN

The entire plant facility, which includes Landfill Cell 717, has a groundwater monitoring system that consists of the necessary number of wells to monitor groundwater moving toward (up gradient) and leaving the facility (down gradient). The Landfill Cell 717 area is currently monitored by a minimum of one (1) up gradient and three (3) down gradient wells. Details of the facility groundwater monitoring systems are presented in Exhibit E-1. Locations of the monitor wells are presented in Attachment G. These wells are sampled and analyzed according to a sampling and analysis plan which satisfies the requirements of Subchapter E of Chapter 43 of LAC 33:V.

EXHIBIT E-1
WELL CONSTRUCTION DETAILS

WELL CONSTRUCTION DETAILS

**PAGE 1 OF 12** 

WELL	DATE	ZONE	ZONE THICKNESS*	PLANT COORD.	GROUND ELEV.®	CASING ELEV. <sup>A</sup>	SCREEN RANGE DEPTH(#.) ELEV	RANGE ELEV. <sup>®</sup>	CONSTRUCTION®
				MOM	MONITOR WELLS				
4	12/80	∢	2	2263/3294	78.6	80.90	26-31	53- 48	2/CS/SS
<del>1</del>	12/80	B-1	15	2268/3306	78.6	80.90	62- 67	16- 11	<b>5/CS/SS</b>
<u>၃</u>	11/80	ပ	15	2270/3315	78.3	80.82	115-125	-3747	4/CS/SS
2A#	12/80	4	Ø	1010/4348	78.1	80.04	29- 34	49- 44	2/CS/SS
3A#	12/80	4	4	427/2790	79.6	81.96	34-39	46- 41	2/CS/SS
<b>4</b>	12/80	∢	6	57/1962	78.5	80.21	30-38	49- 41	2/CS/SS
48	12/80	B-2	41	53/1950	78.4	80.11	63-68	15- 10	2/CS/SS
4B-2	4/85	B-2	4	-107/1816	76.8	78.77	68- 73	9- 4	2/PVC/SS
4 0	12/80	ပ	8	52/1914	78.0	80.11	114-124	-3646	4/CS/SS
5A#	12/80	<b>8</b>	თ	794/1808	78.5	80.98	41- 46	38-33	2/CS/SS
5A-R	1/89	A	8	812/1807		82.01	25-30	3000	2/88/88
5B	4/85	B-1	8	782/1810	79.6	83.17	52- 57	28- 23	2/PVC/SS
5B-1	3/89		6	696/1723	78.7	80.97	48-58	31- 21	2/88/58
2 <del>0</del> 5	2/89		18	821/1805	77.8	79.19	84-94	-616	55/88/2
20	4/89		28	831/1804	77.B	80.86	120:130	.4252	SS/SS/2

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings.

No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum.

Well Diameter/Casing Material/Screen Material E & 6

<sup>(</sup>CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

<sup>#</sup> Wells converted to piezometer status under LADEQ approval letter dated 12/8/86.

WELL CONSTRUCTION DETAILS

**PAGE 2 OF 12** 

WELL NO.	DATE INST.	ZONE	ZONE THICKNESS*	PLANT COORD. NORTH/EAST	GROUND ELEV.®	CASING ELEV.®	SCREEN RANGE DEPTH(ft.) ELEV	ANGE ELEV.	CONSTRUCTION®
				MONI.	MONITOR WELLS				
#Y9	12/80	∢	9	1439/1434	81.0	84.17	36- 41	45- 40	2/CS/SS
<b>6B</b>	12/80	B-1	4	1436/1423	81.0	83.81	50-55	31- 26	<b>2/CS/SS</b>
68-8	1/89	B-1	8	1365/1472	77.5	80.05	02 -09	17-7	2/22/55
<b>68-2</b> 60	4/89 5/89	B-2 C	10	1367/1477 1368/1482	77.8	<b>80.65</b> 80.56	84-94 110-120	. <b>6</b> 16 .3242	2/ <b>SS/SS</b> 2/SS/SS
# 4 2	08/6+	٧	Ç	1008/ 530	ο <b>τ</b> α	RO 50	31- 36	50. 45	55/53/6
78	12/80	. <del>T</del>	र द	1092/ 518	81.0	82.80	70- 75		2/CS/SS
&	12/80	⋖	4	924/ -2	79.0	80.95	27- 32	52- 47	2/CS/SS
8A-R	2/89	A	4	924/ -8	78.4	80.40	30-35	48- 43	2/55/55
8B	12/80	B-1	9	915/ -3	79.0	80.19	51- 56	28- 23	2/CS/SS
8B-1	3/89	9:1	6	916/ -8	77.5	80.45	25: 65	25-15	2/55/55
8B-2	4/89	B-2	12	924/ -15	77.1	80.37	76-86	61	2/83/89
99	4/89	O	8	916/-15	77.7	80.35	118.5-126	4148.5	2/55/55
9 <b>A (OB-28</b> )	3) 3/85	Ą	17+	1785/ -8	78.0	81.41	33- 43	45- 35	2/PVC/PVC
98-1		B:1	4	1685/ 5	79.8	83.50	72:74	8-6	SS/SS/Z
9A-W	4/89	¥	16	1547/-239	57.2	59.74	21- 31	36- 26	2/PVC/PVC

TABLE 2 PROJECT NO. 878009C

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order

Wells Required by Consent Decree

Character Legend Pre-Consent Decree/3008H Order Monitor Wells

Estimated thickness based in feet on nearby borings. \* E 0 0

No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum. Well Diameter/Casing Material/Screen Material

<sup>(</sup>CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

<b>PAGE 3 OF 12</b>	CONSTRUCTION®
	ANGE ELEV.
	SCREEN RANGE DEPTH(ft.) ELEV.PA
DETAILS	CASING ELEV.®
RUCTION	GROUND ELEV.®
WELL CONSTRUCTION DETAILS	PLANT COORD. GROUND NORTH/EAST ELEV.®
	ZONE THICKNESS*
	ZONE
	DATE INST.
	WELL NO.

	4/CS/SS 4/PVC/SS	2/CS/SS 2/CS/SS	2/CS/SS 2/CS/SS 4/CS/SS	2/PVC/PVC	2/PVC/PVC 2/SS/SS 2/PVC/PVC 2/SS/SS 2/SS/SS
	-3646 -4858	48- 43 20- 15	47- 42 14- 9 -4050	49- 44	46- 41 49- 39 29- 24 37- 27 -23- 33
	115-125 126/136	31- 36 59- 64	31- 36 64- 69 118-128	33- 38	35- 40 28: 38 52- 57 41: 51 75: 85
	82.83 80.24	82.22 82.13	79.36 79.50 79.34	84.34	83.18 79.41 83.35 79.41 79.43
MONITOR WELLS	78.3	78.7 78.7	78.2 78.2 78.2	82.0	81.1 77.4 80.9 77.5 77.5
MOM	(REMOVED 1/86) 1686/ -5	2240/ 5 2250/ 6	2428/1154 2428/1144 2428/1133	1213/750	1146/ 657 1069/ 657 1144/ 652 1070/ 661 1067/ 653
	18	11.	3 10	#	13 20 20 20 13
	ပပ	A B-1	∢.º.	∢	A B-1 B-1 G-2
	12/80 12/85	1/81 1/81	12/80 12/80 12/80	3/83	3/83 1/89 3/83 3/89 4/89
	9C-B	10A 10B 10A-W	11A 11B 11C	12A	13A 13A.R 13B 13B-1 13B-2

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings. E 8 6

No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum.

Well Diameter/Casing Material/Screen Material

Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride) \*

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

				WELL CONSTRUCTION DETAILS	RUCTION	DETAILS			PAGE 4 OF 12
WELL NO.	DATE INST.	ZONE	ZONE THICKNESS*	PLANT COORD. NORTH/EAST	GROUND ELEV.	CASING ELEV. <sup>A</sup>	SCREEN RANGE DEPTH(ft.) ELE	AANGE ELEV.®	CONSTRUCTION®
14A#	5/84	4	င	3237/2720	78.1	80.40	29- 34	49- 44	2/PVC/PVC
14B#	5/84	P-1	9	3237/2730	78.1	80.52	65-70	13-8	2/PVC/PVC
14C#	5/84	ပ	14	3237/2740	78.1	80.24	107-117	-2939	4/PVC/PVC
15A	7/84	∢	က	602/-248	79.0	81.69	33- 38	46- 41	2/PVC/PVC
15B	7/84	B-1	ည	591/-247	79.0	81.74	56- 61	23- 18	2/PVC/PVC
16A#	4/85	4	o	2517/1173	9.82	81.63	30- 35	49- 44	2/PVC/SS
17B-1	4/85	<del>8</del> -1	9	878/ 135	78.5	81.17	49- 54	29- 24	2/PVC/SS
17B-2	4/85	B-2	က	874/ 126	78.6	81.12	68- 73	11- 6	2/PVC/SS
20A	4/85	B-1	12	906/ 804	78.0	81.82	42- 52	36- 26	2/PVC/SS
21A 21B-1	11/88 11/88	4 <u>B</u>	26 10	1743/ 386 1744/ 381	91.0	93.09 93.00	56- 66 76- 81	35- 25 15- 10	4/SS/SS 2/SS/SS
22A (OB-30) 3/85	30) 3/85	4	ထ	1389/ -14	7.92	79.89	43- 53	34- 24	2/PVC/PVC

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consem Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings. No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum.

Well Diameter/Casing Material/Screen Material

Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

PAGE 5 OF 12	ANGE ELEV. PA CONSTRUCTION PA
	SCREEN RANGE DEPTH(ft.) ELEV.FA
DETAILS	CASING ELEV.
ELL CONSTRUCTION DETAILS	GROUND ELEV.
WELL CONS	PLANT COORD. GROUND NORTH/EAST ELEV.
	ZONE THICKNESS*
!	ZONE
	DATE INST.

WELL ġ

2/88/88 2/88/88	2/55/55 2/55/55	4/SS/SS 2/SS/SS	2/88/88	2/88/88	4/SS/SS 2/SS/SS	4/SS/SS
52. 42 26-18.5	46- 41 7.5- 2.5	51- 41 22- 12	40- 30	46- 36	47- 37 17- 12	37- 27
28: 38 55-62.5	33- 38 72- 82	28- 38 56- 66	38- 48	33- 43	30- 40 60- 65	41- 51
82.57 83.58	81.16 81.97	80.91 80.17	79.97	81.45	80.31 80.11	80.96
80.6 80.6	79.5 icountered. <b>79.5</b>	78.7 78.5	6.77	79.2	77.8	78.5
161/2225 158/2216	353/1864 79.5 ible (B-1) zone encountered 370/1860 79.5	2413/1366 2425/1349	2239/1805	1688/1592	1927/1546 1929/1549	2080/1679
7	6 I. No permeable 11	6	18	13	9 8	23
A. B-1	1/89 A	A 1-8	⋖	4	4 <del>[</del>	⋖
2/89 3/89	1/89 oN 3/89	5/89 5/89	1/89	1/89	2/89 2/89	2/89
23A 23B-1	24A 24B-1 <b>24B-2</b> 24C	25A 25B-1	26A	27A	28A 28B-1	29A

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings.

No permeable zone indicated in soil boring logs.

E 18 8

All elevations are based on Plant Datum. Well Diameter/Casing Material/Screen Material

<sup>(</sup>CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride) Wells converted to piezometer status under LADEQ approval letter dated 12/8/86.

WELL CONSTRUCTION DETAILS

**PAGE 6 OF 12** 

Ĭ									
WELL NO.	DATE INST.	ZONE MONITORED	ZONE THICKNESS*	PLANT COORD. NORTH/EAST	GROUND ELEV.®	CASING ELEV.	SCREEN RANGE DEPTH(ft.) ELEV	ANGE ELEV.®	CONSTRUCTION®
30A 30B-1	5/89	A 1-8	20 6	1822/1325 1821/1332	82.2 81.6	85.47 83.18	50- 60 69- 74	32- 22 13- 8	4/SS/SS 2/SS/SS
31B-2 31C	•	•	•						
328-1 328-1 328-2									
338-1 338-1 338-2									• •
34A 34B-1							1 1	1 1	•
35A 35B-1 35B-2									• • •

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings. No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum. 0 0

Well Diameter/Casing Material/Screen Material

<sup>#</sup> Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

				WELL CONSTRUCTION DETAILS	RUCTION I	DETAILS			PAGE 7 OF 12
WELL NO.	DATE INST.	ZONE MONITORED	ZONE THICKNESS*	PLANT COORD. NORTH/EAST	GROUND ELEV.	CASING ELEV.	SCREEN RANGE DEPTH(ft.) ELEV	ANGE ELEV.	CONSTRUCTION®
36A 36B-1									
37A 378-1									
378-2	•	•	•	•		•	ı	•	•
38A 38B-1								•	•
39A 39B-1								•	•
40A 40B-1					, ,				
SM-2	5/82	∢	4	647/1694	78.1	79.60	27- 32		2/PVC/PVC
SM-3	2/85	∢	17	1064/724	78.5	80.19	30-32	49- 44	2/PVC/PVC
SM-4	2/85	∢	4	21/ 156	78.1	79.96	34-39		2/PVC/PVC
SM-5	2/82	∢	12	86/ 924	77.4	79.50	34- 39		2/PVC/PVC

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings.

No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum.

Well Diameter/Casing Material/Screen Material ១១១

<sup>(</sup>CS: Carbon Steet; SS: Stainless Steet; PVC: Polyvinyl Chloride)
Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. \*

PAGE 8 OF 12	CTION®	PVC	PVC	PVC PVC	/PVC	/PVC	PVC	/PVC		PVC	PVC	PVC	PVC	PVC
PAGE	CONSTRUCTION®	2/PVC/PVC	2/PVC/PVC	2/PVC/PVC	2/PVC/PVC	2/PVC/PVC	2/PVC/PVC	4/PVC/PVC		2/PVC/PVC	2/PVC/PVC	2/PVC/PVC	2/PVC/PVC	2/PVC/PVC
	RANGE ELEV.	- 2 7	23	3.16.9	22.832.8	4.70.3	-37.842.8	114		51- 41	-1828	50- 40	54- 44	36- 26
:	SCREEN RANGE DEPTH(ft.) ELEV	81- 86	73-78		98-108 2	73-78	115-120 -3	65-80		28- 38	97-107	30- 40	24-34	44- 54
ETAILS	CASING ELEV.	79.37	77.49	77.61	77.17	79.65	79.66	78.38	COMETERS	81.47	81.95	82.95	81.35	83.57
RUCTION D	GROUND ELEV.M	78.1	75.0	75.1	75.2	7.77	77.2	76.1	RVATION WELLS/PIEZOMETERS	79.4	79.4	80.3	78.4	80.4
WELL CONSTRUCTION DETAILS	PLANT COORD. NORTH/EAST	652/1693	-817.9/899.0	-690.1/1025.5		84.9/939.7	83.3/943.5	-708/1104	OBSERVATION	2320/-1499	2323/-1504	2605/- 806	2597/- 210	2195/-1010
	ZONE THICKNESS*	£	6	23	Ī	9	6	14		9	30	13	18	တ
	ZONE	B-2	B-2	B-7	ပ	B-2	O	<b>B</b> -2		∢	B-2	∢	∢	<b>₩</b>
:	DATE INST.	5/82	4/20/88	3/3/08 4/21/88	5/10/88	5/3/88	5/4/88	2/89		3/85	3/85	3/85	3/85	3/85
	WELL NO.	DM-3	AT-1	AT-3	AT-4	AT-5	AT-6	AT-7		OB-21A	OB-21B	0B-22	OB-23	OB-24

<sup>\*</sup> Estimated thickness based in feet on nearby borings.

Character Legend
Pre-Consent Decree/3008H Order Monitor Wells
Wells Required by Consent Decree
Wells Required by Consent Decree and 3008H Order

No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum.

<sup>(3)</sup> Well Diameter/Casing Material/Screen Material

Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

				WELL CONSTRUCTION DETAILS	RUCTION I	DETAILS				PAGE 9 OF 12
WELL NO.	DATE INST.	ZONE	ZONE THICKNESS*	PLANT COORD. NORTH/EAST	GROUND ELEV.	CASING ELEV.	SCREEN RANGE DEPTH(#.) ELEV	RANGE ELEV.®	>	CONSTRUCTION®
				OBSERVATIONS WELLS/PIEZOMETERS	WELLS/PIE	ZOMETERS				
OB-25A	3/85	∢	14	2202/- 401	65.7	68.21	16- 26	50	40	2/PVC/PVC
OB-25B	3/85	B-1	13	2196/- 405	65.0	67.45	39- 49	<b>26</b> -	16	2/PVC/PVC
08-27	3/85	B-1	59	1998/-1405	78.8	81.91	42- 52	37-	27	2/PVC/PVC
OB-28	3/85	Note:	OB-28 renamed 9A.	d 9A.						
0B-29	3/85	4	18	1782/- 604	62.9	65.47	29- 39	34-	24	2/PVC/PVC
OB-30	3/85	Note:	OB-30 renamed 22A.	d 22A.						
0B-31	3/85	4	တ	1400/- 813	78.7	81.57	30- 40	<del>8</del> 4	38	2/PVC/PVC
OB-33	3/85	B-1	13	1299/ 2279	81.3	85.43	99 -95	26-	9	2/PVC/PVC
P-21A	3/85	(1)	9	2325/-1499	79.4	82.57	18- 28	64-	5	2/PVC/PVC
P-22A	3/85	(1)	10	2606/- 805	80.3	82.92	19- 29	-19	51	2/PVC/PVC

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order <u>Character Legend</u> Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree

Estimated thickness based in feet on nearby borings. No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum. Well Diameter/Casing Material/Screen Material € Ø €

<sup>#</sup> Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

				WELL CONST	LL CONSTRUCTION DETAILS	ETAILS			PAGE 10 OF 12
WELL NO.	DATE INST.	ZONE	ZONE THICKNESS*	PLANT COORD. NORTH/EAST	GROUND ELEV.®	CASING ELEV.	SCREEN DEPTH(ft.)	SCREEN RANGE EPTH(ft.) ELEV.®	CONSTRUCTION
P-26	3/85	(1)	&	2205/ -8	77.9	81.12	20- 30	58- 48	2/PVC/PVC
P-29	3/85	(1)	10 (Re	(Removed 12/87)	ŀ	82.37	18- 28	62-52	2/PVC/PVC
P-32	3/85	4	9	610/- 257	78.9	82.01	26-36	53- 43	2/PVC/PVC
P-35	3/85	4	19	87/ 93	97.77	80.77	25- 35	53- 43	2/PVC/PVC
P-36	3/85	∢	က	250/86	78.4	81.09	23- 33	53- 43	2/PVC/PVC
B-282	2/87	B-15	Ŋ	3200/- 800	78.8	81.76	60- 65	19- 14	2/PVC/PVC
				SUPI	SUPPLY WELLS				
886	8/70	"600-foot"	09	1926/ 1815	78.6	79.36	344-384	-265.4305.4	10/CS/SS(6")
1153	28/6	"1200-foot"	175	3145/2728	77.4	80.31	825-975	-744.7894.7	16/CS/SS(10")

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings.

No permeable zone indicated in soil boring logs.

All elevations are based on Plant Datum.

Well Diameter/Casing Material/Screen Material 

Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

WELL CONSTRUCTION DETAILS

**PAGE 11 OF 12** 

WELL NO.	DATE INST.	ZONE	ZONE THICKNESS*	PLANT COORD. NORTH/EAST	GROUND ELEV,®	CASING ELEV.	SCREEN RANGE DEPTH(ft.) ELEV	RANGE ELEV.®	CONSTRUCTION®
		į		INTERC	INTERCEPTOR WELLS	STI			
<u>T</u>	9/81	B-2	23	74/ 1944	81.0	83.30	73- 83	8 2	10/CS/SS
72	9/81	∢	15	81/ 1953	81.2	83.22	32- 47	49- 34	10/CS/SS
<u>6-</u>	3/83	B-1	ဖ	956 / 72	82.7	85.04	9-09	23- 18	10/CS/SS
<u>4</u>	3/83	B-2	လ	1134/535	81.5	83.65	98 -92	6 4	10/CS/SS
<u>-1</u>	3/83 3/83	B-1	14	1170/ 640 1170/ 640	81.7 81.7	84.38 84.38	34- 39 50- 55	48- 43 32- 27	10/CS/SS 10/CS/SS
				ALLIED M	MONITOR WELLS	ELLS			
SM-1	1982	⋖	23	-144/1950	77.0	78.56	33-38	44-39	2/PVC/PVC
9-WS	1982	∢	=	-888/889	76.2	77.79	35-40	41-36	2/PVC/PVC
SM-7	1985	∢	4	-702/1189	78.0	79.30	32-36	46-42	2/PVC/PVC
SM-8	1985	∢	8	-487/1570	78.0	79.36	34-39	44-39	2/PVC/PVC
SW-9	1987	∢	15	-47/2141	78.0	79.35	43-47	35-31	2/PVC/PVC
SM-10	1987	∢	က	518/3594	75.0	76.80	28-33	47-42	2/PVC/PVC

Estimated thickness based in feet on nearby borings.

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

No permeable zone indicated in soil boring logs. E 8 8

All elevations are based on Plant Datum.

Well Diameter/Casing Material/Screen Material

<sup>#</sup> Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride)

PAGE 12 OF 12	CONSTRUCTION®
	RANGE ELEV.
	SCREEN RANGE DEPTH(ft.) ELEV. <sup>FA</sup>
DETAILS	CASING ELEV.
RUCTION	GROUND ELEV.
WELL CONSTRUCTION DETAILS	PLANT COORD. GROUND NORTH/EAST ELEV.
	ZONE THICKNESS*
	ZONE

DATE

WELL

WELL NO.	INST.	MONITORED	THICKNESS*	NORTH/EAST ALLIED MC	ALLIED MONITOR WELLS	ELEV.®	DEPTH(ft.) ELEV	ELEV.®	CONSTRUCTION®
DM-1	1982	B-2	ო	236/2872	77.3	78.68	66-71	11-6	2/PVC/PVC
DM-2	1982	B-2	4	-149/1951	76.9	78.40	68-73	9-4	2/PVC/PVC
DM-4	1982	B-2	12	-887/894	76.3	77.62	70-75	6-1	2/PVC/PVC
DM-5	1985	B-2	80	-703/1187	78.0	79.28	73-78	5-0	2/PVC/PVC
DM-6	1985	B-2	ಧ	-486/1573	78.0	79.27	77-82	4	2/PVC/PVC
LM-1 LM-2	1987 1987	OO	× 20	-155/1953 -885/900	77.0 76.3	79.15 78.58	116-126 115-125	-3949	2/PVC/PVC 2/PVC/PVC

WARE LIND FURLOW ENGINEERS, INC. BATON ROUGE, LOUISIANA

Wells Required by Consent Decree and 3008H Order Additional Wells Required by EPA 3008H Order Pre-Consent Decree/3008H Order Monitor Wells Wells Required by Consent Decree Character Legend

Estimated thickness based in feet on nearby borings. No permeable zone indicated in soil boring logs. E 8 5

All elevations are based on Plant Datum.

Well Diameter/Casing Material/Screen Material

Wells converted to piezometer status under LADEQ approval letter dated 12/8/86. (CS: Carbon Steel; SS: Stainless Steel; PVC: Polyvinyl Chloride) \*

ATTACHMENT F
CORRECTIVE ACTION PLAN

# ATTACHMENT F

# CORRECTIVE ACTION PLAN

# Table of Contents

I.	PURPOSE	1
II.	CORRECTIVE ACTION PLAN	1
	List of Exhibits	
	List of Exhibits	
F-1	Consent Decree	

# ATTACHMENT F

# CORRECTIVE ACTION PLAN

# I. PURPOSE

The purpose of the Corrective Action Plan is for RES(LA) to demonstrate compliance with the requirements of Subchapter E of Chapter 43 of LAC 33:V.

# II. CORRECTIVE ACTION PLAN

RES(LA) is currently performing corrective action measures on Landfill Cell 717 as well as the surrounding areas which are not related to Landfill Cell 717. These measures are in accordance with a February 17, 1987 Consent Decree with LDEQ, copy of which is attached as Exhibit F-1. Landfill Cell 717 is currently being closed under an approved Phase I - Partial Facility Closure Plan which was developed under this Decree. Work activities outlined by this Consent Decree will continue to be implemented by RES(LA).

EXHIBIT F-1
CONSENT DECREE

STATE OF LOUISIANA, THAOUGH THE DEPARTHENT OF ENVIRONMENTAL QUALITY

VEDSUS

ROLLING DOVINORHEDTAL SERVICES, (LA.), INC.

NUMBER 302,645 DIVISION ONE

19TH JUDICIAL DISTRICT COURT

PARISH OF CAST EATON ROUGE

STATE OF LOUISIANA

# COMBERT DECREE

Plaintiff, the State of Louisiana, appearing herein through Monorable William J. Guste, Jr., Attorney General, and Marren D. Byrd, II, Assistant Attorney General, Louisiana Department of Justice, and Hartha A. Hadden, Secretary, and Roland T. Huson, General Counsel, Louisiana Department of Environmental Quality; the Defendant, Rollins Environmental Services (LA), Inc., appearing herein through its duly authorized and undersigned counsel of record, and Franklin II. Willis and David T. Hagerman, its duly authorized and undersigned officers in charge of the Rollins facility located in East Daton Rouge Parish, empowered pursuant to the Resolution of the Board of Directors, a copy of which is attached heroto as Exhibit A: and the Intervenors, the Honorable Pat Screen, Mayor-President of and the City of Baton Rouge and the Parish of East Baton Rouge (City/Parish) through their duly authorized and undersigned counsel of record, Frank S. Craig, III, do hereby jointly represent to the Court:

WHEREAS, the State, Rollins and the City/Parish, desiring to resolve amicably a controversy which has arisen between them, and to avoid the uncertainties and expense of litigation, without the necessity of trial or adjudication of any issue of fact or law, have, after consultation with their attorneys, and, without any admission of liability or fault as to any allegations or matters arising out of the contentions of any party, agreed to the making and entry of this Consent Decree, as follows:

IT IS HEREBY ORDERED, ADJUDGED AND DECREED as follows:

# A. FACTUAL BACKGROUND

Rollins Environmental Services (LA), Inc. (hereinafter sometimes referred to as "Rollins") is a major treatment/storage/disposal hazardous waste facility located in East Baton Rouge Parish, Louisiana operating under interim status, and has, at all times pertinent hereto, been the owner and operator of Cell 717, which is a hazardous waste disposal cell located at Rollins' facility at 13351 Scenic Highway, Baton Rouge, Louisiana, in East Daton Rouge Parish. Rollins is subject to the Louisiana Environmental Quality Act and the regulations promulgated thereunder with regard to its operation of Cell 717 and the leachate collection system and leak detection system which are parts of Cell 717.

In Hay of 1903 the testing and analysis of samples taken from the monitor wells which are a part of the leak detection system indicated the presence of hazardous waste contaminants existed under Coll 717. The presence of said hazardous waste contaminants could be a consequence of a leak in Cell 717, pre-existing cells subsequently excavated, some other source, or a combination of the foregoing, and have raised the issue of the operability of the leak detection system. Said contaminants have existed from May of 1983 until the present date. In May of 1986 the Louisiana Department of Environmental Quality issued a Compliance Order to Rollins requiring Rollins to undertake certain action regarding analysis and investigation of the contamination, its source, and the remedial action required, a copy of which Compliance Order is attached hereto at Exhibit B. Rollins has, to date, complied with the timetables set forth by the Louisiana Department of Environmental Quality in the May 13, 1986, Compliance Order, and Rollins has conducted testing, sampling and analysis of the contamination, the geology and other

factors involving the subject of the leak detection system at Cell 717. Rollins is presently compiling analytical results of the recovery wells to identify and quantify the hazardous waste contaminants for DEG.

Rollins has indicated a desire to abide by the past and future orders and directives of the Louisiana Department of Environmental (mulity with regard to Cell 717 and its leachate collection system and leak detection system, which is the subject of this lawsuit, and to take the corrective action required to ensure that Cell 717 has a properly operating and functioning leachate collection system and leak detection system in order to provide health, safety, welfare and environmental assurances to the parties with regard to the contaminants contained within Cell 717.

### B. DEFINITIONS

For purposes of interpretation of this Consent Decree the following definitions shall apply:

- 1. "State" shall mean the State of Louisiana through any of its departments, agencies or political subdivisions, including but not limited to the Louisiana Department of Justice ("DOJ"), and the Louisiana Department of Environmental Quality\*("DEQ"), together with their respective successors in interest;
- 2. "Rollins" shall mean Rollins Environmental Services (LA), Inc. and any and all of its successors, purchasers or assigns, in whole or in part and as their interests may appear;
- 3. "Cell" and/or "Cell 717" shall mean that landfill cell including all appurtenances thereto designated as Cell 717 on the map attached hereto and marked as Exhibit C;
- 4. "DOJ" shall mean the Louisiana Department of Justice and its successor(s) in interest;

- 5. "DDD" shall mean the Louisiana Department of Environmental Quality and its successor(s) in interest;
- 6. "City/Parish" shall mean the Hayor-President of and the City of Paton Houge, Louisiana and the Parish of East Daton Rouge, political subdivisions of the State of Louisiana;
- 7. "Corrective Action Plan" shall mean a detailed written plan, as modified or amended, submitted to DEO by Rollins in accordance with the requirements of the Louisiana Environmental Quality Tact and the Louisiana Hazardous Waste Regulations, as finally approved by DEO, to address the issues involved in this litigation.

#### C. JURISDICTION

The Mineteenth Judicial District Court for the Parish of East Baton Rouge, State of Louisiana, has jurisdiction over the subject matter of this action and personal jurisdiction over the parties, and shall in accordance with the enforcement provisions of this Consent Decree, be vested with exclusive continuing jurisdiction in connection with the enforcement of this Consent Decree. The original and first amended petition of the State of Louisiana, and the interventions of the City/Parish, all set forth claims for relief under the Louisiana Environmental Quality Act and the Louisiana Mazardous Waste Regulations.

# D. OBJECTIVES

The State and the City/Parish and Rollins agree and stipulate that the ultimate objective of this Consent Decree is to avoid incurring additional court costs and attorney fees and to agree on the formulation and implementation by Rollins of a Corrective Action Plan, to be approved by DEQ, directly related to the operation of Cell 717 so as to assure that the leachate collection system and leak detection system at Cell 717 comply with Chapter 3.5(e) and the other

applicable provisions of the Louisiana Mazardous Maste Regulations and the Louisiana Environmental Quality Act and do not pose a right of injury or harm to the environment, or to the health, safety and welfare of the people of the City of Daton Rouge, the Parish of Dast Daton Rouge or the State of Louisiana, presently or horeafter.

# E. DINDING EFFECT

The provisions of this Consent Decree shall apply to and be binding upon the above named parties to this action upon their officers, directors, agents, trustees, servants, employees, successors, assigns, attorneys and all persons and firms and corporations in active concert or participation with such parties acting under, through or for them with respect to obligations under this Consent Decree. Rollins shall give a copy of this Consent Decree to any and contractors who perform corrective action work for Rollins pursuant to this Consent Decree. Rollins shall give written notice of this Consent Decree to any successors in interest prior to transfer of ownership or operation of the Rollins facility, and shall provide a copy of this Consent Decree to any successor in interest. Rollins shall notify in writing the Louisiana Department of Environmental Quality and the Louisiana Department of Justice of any successor in interest at least 30 days prior to transfer.

# F. REGULATORY POUR OF STATE

Notwithstanding that the parties hereto have agreed to forego adjudication of their rights in this matter, related to the leak detection system and leachate collection system at Cell 717, the State and Rollins do hereby mutually agree, declare, acknowledge, warrant and stipulate to the following:

1. Rollins shall and does by these covenants submit to the jurisdictional and regulatory authority of the State and its agencies, specifically including DEQ, as

provided for and imposed by this Consent Decree with respect to the actions to be taken by Rollins with regard to its management and operation of the leak detection system and leachate collection system of Cell 717, henceforth, which jurisdiction and regulatory authority of the State and its agencies, specifically including DEQ, shall not be disputed, litigated or otherwise challenged by Rollins in this or any other court.

2. Rollins stipulates that any dispute it may have with the State through PDQ respecting the management and operation of the leak detection system and leachate collection system of Cell 717 shall be resolved solely through the dispute resolution provisions contained in this Consent Decree.

# G. CURRECTIVE ACTION MEASURES

Dased on the objectives of this Consent Decree, as set forth in Section D, which are to assure that the leachate collection system and leak detection system at Cell 717 are maintained in proper working condition, Rollins hereby agrees and warrants to conduct the following corrective action measures:

- 1. Rollins shall develop a Corrective Action Plan in accordance with the requirements of the Louisiana Environmental Quality Act and the Louisiana Hazardous Waste Regulations, which shall include the following tasks:
  - pursuant to DEQ Compliance Order dated May 13, 1936 until the date of this Consent Decree, restore all repairable leak detection wells, leachate collection pipes, and pumping systems to working order. A report will be prepared and submitted to DEQ identifying all action taken. This report will

be submitted to DEG within 105 days after the signing of this Consent Decree and will assess the effectiveness of the leachate collection system and the leak detection system, as restored. The report shall propose any required corrective action measures, which will allow the leachate within Cell 717 to be maintained at the lowest practicable level. Rollins shall, within 105 days after the signing of this Consent Decree, provide a schedule for implementing corrective action which shall be submitted to the DEQ for review and approval. DEQ may approve the schedule for corrective action or disapprove until modifications or amendments are Unless otherwise extended, the made thereto. corrective action measures, as modified or amended, as submitted to DEQ by Rollins shall be completed within 135 days of DEQ's final approval.

b) Upon the signing of this Consent Decree, Rollins shall begin to develop, prepare and submit a revised initial closure plan for landfill Cell 717 in accordance with the Louisiana Hazardous Waste Regulation governing preparation of closures. The revised initial Cell 717 closure plan must be submitted for review by DEO within 75 days after the signing of this Consent Decree. DEO may approve the Cell 717 closure or order modifications or amendments made thereto. After the reports, as modified or amended, referred to in paragraphs 1(a) and 1(e) have been submitted to DEO, and reviewed and approved by DEO, a revised final closure plan

shall be submitted promptly for review and approval to DEC. DEC shall, at all times, have the power to withhold approval or disapprove until modifications or amendments to the Cell 717 closure plan have been made by mollins.

- c) Upon final approval of a closure plan for Cell 717 by DEG, Rollins shall commence the approved activities for closure of Cell 717. Unless otherwise specified in the approved Cell 717 closure plan, the closure activities shall be accomplished within a period of time comprised of the following elements:
  - (1) the completion time required for construction of closure elements, plus;
  - (2) any period of time during which (c)'s activity must be postponed in order to complete the activities of Task (a) corrective action of leachate collection and leak detection, plus;
  - (3) any period of time during which (c)'s activity must be postponed in order to complete Tasks (d) and (f), plus;
  - (4) any reasonably documented delay of (c)'s activity due to Act of God and/or Force Majeure.
- d) Rollins shall submit an initial soil boring plan proposing sufficient test excavations or borings located in such a manner as to adequately describe the subsurface geology, including identification of

subsurface lithologic strata and the horizontal and vertical extent of contamination in the groundwater environment to the extent necessary to achieve the objectives of this Consent Decree. This initial boring plan and a schedule of activities, shall be submitted within 15 days after the signing of this Consent Decree for review and preliminary approval by DIT. Upon signing of this agreement, Rollins shall initiate a research activity, and complete same within 60 days after the signing of this Docree. This research activity will Consent provide a descriptive history of the development of the site for use in assessing corrective action alternatives. Hinety (90) days after the signing of this Consent Decree a written report shall be submitted by Rollins for review and final approval DEG presenting a summary of findings with any recommendations for revisions to the previously submitted soil boring plan and/or a test excavation plan including a time schedule for accomplishing all proposed boring activities, and a report prepared by a qualified geologist or geotechnical engineer prescribing the location and depth of borings, and evaluating corrective action alternatives for review and approval by DEQ. Rollins shall conclude the activities of the DDQ approved final boring plan within a period of one bundred eighty (180) days of its approval by DEQ. These activities shall include performing all continuous borings in the DEO approved locations, test excavations, grouting or plugging, all field work, laboratory sample analysis, field notes classifying soil types, geotechnical laboratory analyses of

soil and analytical laboratory results accompanied by boring logs. Rollins shall, one hundred eighty (180) days after DDQ approves the final soil boring plan, submit a written report to DBQ recommending a program for installation of monitoring wells and piezometers.

- Decree, Rollins shall begin to research the history of construction and operation of Cells 619 and 719. Cells 619 and 719 are old hazardous waste cells which are located near the western side of the presently existing Cell 717. This project shall be completed within 20 days after the signing of this Consent Decree. The information developed herein shall guide Rollins in its efforts to properly position any required borings and/or test excavation activity in the area of Cells 619 and 719. A corrective action plan for Cells 619 and 719, as modified or amended, shall be submitted to DEQ for approval within 180 days after the signing of this Consent Decree.
- f) Upon receipt by Rollins of the DEO approval of the Cell 519 and 719 corrective action plan, as modified or amended, Rollins shall commence the activities prescribed within that DEO approved plan, and report the completion of prescribed corrective action measures to the DEO. Subsequently, Rollins shall recome the final closure activity outlined in Task 1(c).

- Upon receipt by Rollins of the approval by DIC of g) recommended monitoring well program, (Task 1(d)), Rollins shall install the DDG approved monitoring wells. Upon completion of the new monitoring wells, Rollins shall begin to pump, sample and analyze the water in these wells. Within 240 days after the DEQ approval of the recommended monitoring well program, Rollins shall prepare and submit to DEQ an engineering report of sufficient detail define the recommended to corrective action to be utilized to assure that the detection system and leachate collection system of Cell 717 serves their intended purpose. The new and existing monitoring and/or interceptor wells will be included in an expanded groundwater monitoring and remediation plan, and documented in this report, so that the ultimate objectives of this Consent Decree (Section D) will accomplished.
- modified or amended, submitted to DEQ at the completion of Task 1(g), Rollins shall implement the DEQ approved corrective action plan. Upon completion of the DEQ approved corrective action plan, Rollins shall submit a report to DEQ for DEQ's review and approval. This report shall include recommended frequencies of monitoring and sampling and propose the groundwater analysis program. The data collected shall be included on a continuing basis in the next full quarterly report of the Groundwater Honitoring Program. In addition

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to the raw data, representative parameters acceptable to DEO will be graphically illustrated showing concentration versus time for all monitoring and recovery wells.

- i) At any time that activities are conducted pursuant to Tasks 1(d) and 1(g) above and it becomes apparent to DEC that intermediate corrective action measures should be taken to alleviate developing risks of contamination, DEC may require Rollins to submit a plan for implementation of such measures without regard to the time periods set out in this Consent Decree.
- Notwithstanding any provision set forth in this j) Section G Corrective Action Measures, it is understood by all parties that with regard to any plan, corrective action work, schedule, activity or undertaking to be submitted by Rollins to DEG for implementation, that DEQ has, and shall continue to have, the power to either approve the submission of Rollins or Lisapprove unless and until Rollins modifies, changes, amends or otherwise corrects the submitted work to DEQ's satisfaction. Only when has approved all submitted work for DEQ implementation, with or without modifications or amendments, shall it be considered approved for purposes of implementation by Rollins.
- 2. It is the intent of DEG to completely review and respond to all plans and/or reports from Rollins within sixty (60) days after submittal to DEG.

#### H. MESOLUTION OF DISPUTES AND STIFULATED CIVIL PENALTIES

In the event of a dispute between DEQ and Rollins as to the reasonableness, necessity or propriety of any written order, notice or directive issued by DEQ pursuant to its regulatory authority and this Consent Decree, relating to compliance of the leachate collection system and leak detection system of Cell 717 with Chapter 3.5(e) and the other applicable provisions of the Louisiana Mazardous Waste Regulations and the Louisiana Environmental Quality Act, the position of DEG shall govern the conduct of the parties unless Rollins files a petition, within twenty (20) days after receipt of the written order, notice or directive by certified mail from DEQ in the Dinetcenth Judicial District Court for the Parish of East Baton Rouge, Louisiana setting forth the nature of the dispute and a proposal for its resolution. DEQ shall then have thirty (30) days from service within which to answer the petition and may therein propose an alternate solution. The City/Parish has the right to appear in these proceedings. DEQ or Rollins may, in appropriate circumstances, apply to this Court for such expedited relief as is then permitted under the Louisiana of Civil Procedure rules applicable to summary proceedings; and with the rules governing ordinary proceedings with respect to discovery to be applicable as set forth hereinafter. Either party shall have the right to notify this Court that it shall conduct discovery for a period of thirty (30) days after DEQ files its answer and before the dispute is set for expedited hearing by this Court. After the expiration of the above thirty (30) day discovery period, if applied for, either party may, for good cause shown, further petition this Court for an additional period of time, to be set by this Court, to continue to

conduct discovery. Upon conclusion of the discovery periods set forth above, if applied for, and barring amicable resolution, the controversey shall be adjudicated by these summary proceedings in which Rollins shall bear the burden of proof of establishing that DDQ's action (1) has violated or is in excess of the constitutional or statutory authority of DDQ together with this Consent Decree; or (2) has been arbitrary or capricious; or (3) has been an abuse of discretion or clearly unwarranted exercise of discretion; or (4) is not authorized under the terms of this Consent Decree. The Court shall resolve the dispute and issue an appropriate order accordingly, which order may be appealed by the aggrieved party as any other civil matter.

- 2. In the event the Court on such adjudication sustains the position of DEQ in the dispute, the Court may, in its discretion, grant to Rollins a specified number of days within which to comply with the DEQ directive and during which Rollins shall not be deemed in default, or the Court may order Rollins to comply with the DEQ directive and impose the stipulated civil penalties as provided for in Paragraph 4 of this Section. The stipulated civil penalties shall accrue from the original date of non-compliance as reflected in the DEQ order, notice or directive, or such later date as this Court determines.
- 3. If DEO determines that Rollins has failed to comply with the approved Corrective Action Plan or has otherwise violated the Corrective Action Plan, this Consent Decree or any written order, notice or directive issued by DEO pursuant to its regulatory authority and this Consent Decree, then DEO shall promptly issue a written notice of default to Rollins. Within twenty (20) days after receipt by Rollins of the notice by certified mail, DEO and Rollins shall attempt to amicably resolve the matter. Thereafter,

DEC may file in this Court a Rule to Show Cause why kolling should not be held in default. Tither party shall have the right to invoke the discovery provisions set forth in Paragraph 1 of this Section. After due proceedings, the court shall (1) find Rollins is not in default; or (2) find Rollins is in default but mitigating circumstances justify an additional delay for performance during which the penalties provided in Paragraph 4 below shall not accrue; or (3) find Rollins in default and shall rule whether the penalties established in paragraph 4 shall be accrued from the original date of non-performance, or the date of receipt of the notice, or the date of the Court's ruling. In any case, the Court may order performance by Rollins.

- 4. In the event of an adjudication of default on the part of Rollins, stipulated civil penalties may be claimed by DEC against Rollins to the extent of a maximum of \$1,000 for each day of default during the first thirty (30) days thereof, \$5,000 for each day of default during the next thirty (30) days thereof, and \$10,000 for each day of default thereafter. Nothing herein shall be so construct as to prevent voluntary payment of the stipulated civil penalties by Rollins on written demand of DEC.
- 5. The stipulated civil penalties set forth above shall be in lieu of the imposition of any civil penalty which might otherwise be applicable under the Louisiana Environmental Quality Act or any other laws or regulations of the State or its political subdivisions, now existing or hereafter enacted. Payment of such penalties, if claimed by DEQ (and uncontested by Rollins) or determined by the Court to be warranted, shall be made payable to the Louisiana Department of Environmental Quality and tendered to the Attorney General, Louisiana Department of Justice,

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Environmental Enforcement Section, 7434 Perkins Boad, Suite C, Baton Rouge, Louisiana 70000 by the fifteenth day of the month following the date of assessment of the penalties. A copy of the letter showing tender of payment shall be mailed to the Secretary of the Louisiana Department of Environmental Quality, Post Office Dox 44056, Daton Rouge, Louisiana 70804.

- Section II (1-5) is expressed in terms of DEC's relationship with Rollins, the DCJ and the City/Parish may, in the event that either of them has a dispute with DEQ as to any written order, notice or directive issued by DEQ governed by Section III., invoke the applicable Dispute Resolution provisions of Section II to resolve such disputes between DEQ, DOJ and the City/Parish to enforce the provisions of this Consent Decree.
- 7. Nothing herein shall be construed to deny or limit any party's right to appeal, in accordance with the Louisiana Code of Civil Procedure, of any ruling, judgment or order by this Court. However, no appeal shall stay the execution of this Court's ruling, judgment or order unless ordered by the First Circuit Court of Appeal.

#### I. FORCE HAJEURE

delay in the achievement of any requirement under the Corrective Action Plan, this Consent Decree or any orders or directives issued pursuant thereto, Rollins shall notify DEQ in writing within ten (10) days of knowledge of the conset of such event, describing in detail the anticipated length of the delay, the precise cause or causes of the delay, the measures taken or to be taken by Rollins to prevent or

minimize any such delay and to comply with all said requirements as soon as possible. Failure by Rollins to comply with the notice requirements of this paragraph shall render paragraphs 2, 3 and 4 of this Section void and of no effect as to the particular incident involved.

- 2. If and only if the delay or anticipated delay has been or will be caused by fire, flood, riot, strike or other circumstances beyond the control of and without the fault of Rollins, then the time for performance hereunder may, upon prompt request by Rollins and pursuant to the procedures set forth in paragraphs 3 and 4 of this Section, be extended for a period no longer than the delay resulting from such circumstances and the stipulated damages may be suspended for a like period.
- 3. If DEQ agrees that a delay has been or will be caused by fire, flood, riot, strike or other circumstances beyond the control of and without the fault of Rollins, then the parties shall advise the Court by written notice that an extension of time for the particular matter affected has been agreed to by DOJ, DEQ & Rollins. If DEQ does not so agree, then Rollins shall submit the matter to the Mineteenth Judicial District Court for adjudication by summary proceeding within the time frame and pursuant to the provisions set forth in Section N of this Consent Decree.
- 4. The burden of proving that any delay is caused by circumstances beyond the control of and without the fault of Rollins and the length of the delay attributable to such circumstances shall rest with Rollins. Financial, economic or business conditions or changes in same, increased costs or expenses, shall not be a basis for any modification of the Corrective Action Plan or for extensions of time. Delay in achievement of one matter required by the Corrective Action

Plan shall not necessarily justify or excuso delay in achievement of subsequent matters.

#### J. FUNDING

Performance of the terms of this Consent Decree by Rollins is not conditioned upon receipt of, nor excused by the lack of, any funds or the ability/inability to procure the necessary capital to implement and complete all presently contemplated and further required remediation or corrective action measures.

#### K. REPORTING, ENTRY AND INSPECTION

1. Notwithstanding any and all other reports required to be submitted to DEQ under the Louisiana Environmental Quality Act and/or the Louisiana Hazardous Waste Regulations, Rollins shall submit written reports and/or plans to DEQ in accordance with the provisions set forth in Section G of this Consent Decree. A copy of the written reports and/or plans shall also be submitted to DOJ and the City/Parish. All reports and/or plans shall be available for public inspection at the offices of DEQ and DOJ during the pendency of this Consent Decree.

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2. During the implementation of any of the plans, studies or corrective actions required by this Consent Decree, or plans submitted hereunder, DOJ and DEQ or their authorized representatives, shall have authority to enter the Rollins facility at reasonable times for purposes of examining remedial and corrective action measures, and inspecting and copying records, logs, contracts, permits or other documents relating in any way to compliance with this Consent Decree. For reasons of safety, a qualified and knowledgeable representative of Rollins may accompany DOJ and/or DEQ on such inspections, but in no event shall the

absence of a qualified and knowledgeable representative hinder or delay the inspection.

#### L. RELUASE

and the City/Parish hereby release Rollins, all of their past, present and future officers, agents, employees, insurers, underwriters, parents or subsidiaries, and all other persons, entities, firms or corporations who or which may be liable or responsible, for any claims or demands (except those for future remediation, cleanup or corrective action restoration, specifically including, but not limited to, groundwater) which may have arisen or could arise out of those acts or actions by Rollins which were connected with the subject matter of the two (2) DEQ orders dated Hay 13, 1986 and the State's original and amended petitions filed in this proceeding on June 5, 1986 and September 24, 1936 respectfully, and the City/Parish's interventions filed in this proceeding on November 25, 1986 and January 13, 1987. The above referenced claims or demands shall be dismissed by the State and the City/Parish with prejudice, with the present court costs to be paid by Rollins, it is understood by the parties, however, that submission and entry of this Consent Decree, does not discharge any claims or demands which the State or the City/Parish may hereafter acquire under this Consent Decree and/or the Corrective Action Plan arising from the failure of Rollins to comply with its herein assumed obligations or any other claim not a part of this Consent Decree, except for those claims set forth in the Settlement Agreement referred to in Section H of this Consent Decree.

#### H. NON-UNIVER PROVISIONS

l. The State of Louisiana and the City/Parish do not waive any rights or remedies available to them for any violation by Rollins of federal or state laws, regulations, or permit conditions following completion of the requirements

of this Consent Decree, except as otherwise expressly provided herein or as set forth in the Settlement Agreement referred to in Section II of this Consent Decree.

- 2. This Consent Decree does not limit or affect the rights of the State of Louisiana, the City/Parish, or Rollins as against any third parties who are not parties to this Consent Decree.
- 3. The State of Louisiana and the City/Parish reserve any and all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as set forth in Section II of this Consent Decree.

#### N. SETTLEMENT OF DISPUTE

- 1. Pursuant to that document entitled Settlement Agreement between the State of Louisiana and Rollins, and dated February 17, 1987, the State of Louisiana will receive the sum of ONE HILLION TWO HUNDRED FIFTY THOUSAND (\$1,250,000.00) DOLLARS as a part of the total settlement package set forth in the Settlement Agreement including the compromise and settlement of all outstanding claims against Rollins by the State based on Rollins operating Cell 717 with the leak detection system and leachate collection system in their present condition, as well as for other claims unrelated to this instant matter, all of which are set forth more particularly in the above referenced Settlement Agreement.
- 2. Payment of the aforesaid \$1,250,000.00 sum shall be made by certified check or cashier's check payable to "The Louisiana Department of Environmental Quality" and, pursuant to La. R.S. 30:1073, shall be tendered to William J. Guste, Jr., Attorney General, Louisiana Department of Justice, Environmental Enforcement Section, 7434 Perkins Road, Suite C, Baton Rouge, Louisiana, Attention: Warren E. Byrd, II, Assistant Attorney General.

3. The 01,250,000.00 payment provided herein shall be due and payable within ten (10) days after execution by the Court of this Consent Decree.

#### O. RUTENTION OF JURISDICTION

The Court shall retain jurisdiction to enforce the terms and conditions of this Consent Decree, to make modifications to this Consent Decree necessary to effectuate compliance with any statutes or regulations, and to resolve all disputes arising hereunder as may be necessary or appropriate for the construction or execution of this Consent Decree.

#### P. TERMINATION OF JUDGMENT

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shall be in full force and effect, without the necessity or formality of reinscription, until such time as DEQ and DOJ notify this Honorable Court that Rollins has completed all required corrective action measures called for under the terms of this Consent Decree and the leak detection system and leachate collection system of Cell 717 have operated for a period of two (2) years without the need for additional corrective action measures; and DEQ, DOJ, and the City/Parish notify this Honorable Court that there are no outstanding disputes under Section H and all sums due under Section H have been paid, if any have been assessed.

JUDGMENT READ, RENDERED AND SIGNED in Open Court in Baton Rouge, Louisiana, on this \_\_\_\_\_\_ Gay of \_\_\_\_\_\_, 1987.

JUDGE STATE
HINETEENTH JUDICIAL DISTRICT
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Louisiana Department of
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Directors and this officer
Rollins Environmental Service
13351 Sceale Highes
Eaton Rouge, Louisians 7880

ATTACHMENT G

MONITORING WELL LOCATIONS

# ATTACHMENT G

# MONITORING WELL LOCATIONS

# Table of Contents

I.	PURPOSE	-									
II.	MONITORING WELLS										
	List of Exhibits										
Exhi	oit G-1 Location Map of Groundwater Monitoring Wells										

#### ATTACHMENT G

#### MONITORING WELL LOCATIONS

#### I. PURPOSE

The purpose of the Monitoring Well Location map is for RES(LA) to demonstrate compliance with the requirements of Subchapter E of Chapter 43 of LAC 33:V.

#### II. MONITORING WELLS

The locations of the groundwater monitoring system for Landfill Cell 717 are shown on Exhibit G-1. The system satisfies the groundwater monitoring requirements of Subchapter E of Chapter 43 of LAC 33:V.

EXHIBIT G-1
LOCATION MAP OF GROUNDWATER
MONITORING WELLS

ATTACHMENT H
CONTINGENCY PLAN

# ATTACHMENT H

# CONTINGENCY PLAN

# Table of Contents

I.	PURPOSE 1					
II.	BASIC CONSIDERATIONS					
III.	IMPLEMENTATION OF THE CONTINGENCY PLAN					
IV.	COMMUNICATIONS SYSTEMS					
V.	PRIOR NOTIFICATION AND ARRANGEMENTS WITH LOCAL AUTHORITIES AND RESPONDERS					
VI.	PROCEDURE IN THE EVENT OF AN EMERGENCY SITUATION					
	A.	Weekd	lays	4		
		1. 2. 3. 4.	Immediate Action  Notification of Appropriate Outside Agencies  Shutdown of Operations  Control Measures	6 6		
	В	Nights	, Week-ends, and Holidays	7		
		1. 2.	Warnings, Evacuation, and Assembly			
VII.	BOMB THREAT 1					
VIII.	WATERWORKS WARNING NETWORK PLAN					
IX.	UNINTERRUPTIBLE POWER SUPPLY SYSTEM					
X.	AMENDMENT OF CONTINGENCY PLAN					

# Table of Contents (Continued)

# List of Exhibits

Exhibit H-1	SWP-5019 Emergency Organization
Exhibit H-2	Emergency Hurricane/Tornado Procedures
Exhibit H-3	Evacuation Procedures
Exhibit H-4	Fire Response Procedures
Exhibit H-5	Spill Prevention Control and Countermeasures Plan (SPCC)
Exhibit H-6	Releases to the Air
Exhibit H-7	Bomb Threat
Exhibit H-8	Waterworks Warning Network Plan
Exhibit H-9	Emergency Contacts and Telephone Numbers
Exhibit H-10	Safety Equipment

#### ATTACHMENT H

#### CONTINGENCY PLAN

#### I. PURPOSE

The purpose of this Contingency Plan is to establish guidelines for the orderly handling and reporting of emergency situations which occur or could foreseeably develop. The Oil Spill Prevention and Countermeasures Plan which is affixed as Exhibit H-5 is to be part of this plan. The first priority in any emergency situation will be the protection of human safety and the prevention of injury.

#### II. BASIC CONSIDERATIONS

- A. Major emergency defined: Any explosion, fire, material release or natural disaster (hurricane, tornado, flood, etc.) which has destroyed or threatens to destroy plant property or impair plant operations or results in a discharge of waste materials into the environment and is beyond the capability of on-duty personnel to control.
- B. A major emergency may originate from on-plant activity such as spills, fires, contractor work, chemical reaction, chemical release, etc., or off-plant activity such as aircraft crash on plant property, fire or air release from neighboring property or natural disasters.
- C. A major emergency may occur at any time. For this reason, pre-planned drills will be conducted periodically for each shift so that <u>ALL</u> personnel are thoroughly familiar with the procedures involved.
- D. An Emergency Organization has been established at the Plant according to the outline in Exhibit H-1. A primary and at least one alternative coordinator for each function has been assigned as indicated. Because of the limited number of available people, a supervisor assigned as "primary coordinator" for one function may also be assigned as the "alternate coordinator" for some other function.
- E. First consideration must always be given to protecting and sustaining human life. Consequently, evacuating injured personnel from the emergency zone to a safe area and securing medical treatment must always be a priority action. The same high priority must be given to protecting occupants of the areas surrounding the plant if any emergency occurring on-site would threaten them.

#### III. IMPLEMENTATION OF THE CONTINGENCY PLAN

The decision to implement the contingency plan depends upon whether or not an imminent or actual incident could threaten human health or the environment. The purpose of the section is to provide guidance to the Emergency Coordinator in making this decision by producing decision making criteria.

The Contingency Plan will be implemented in the following situations:

#### A. Fire and/or Explosion

- 1. A fire causes the release of toxic fumes.
- 2. The fire spreads and could possibly ignite materials at other locations on-site or could cause heat-induced explosions.
- 3. The fire could possibly spread to off-site areas.
- 4. Use of water or water and chemical fire suppressant could result in contaminated runoff which cannot be contained and/or routed for treatment or disposal.
- 5. An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
- 6. An imminent danger exists that an explosion could ignite other materials at the facility.
- 7. An imminent danger exists that an explosion could result in release of toxic materials.

#### B. Spills or Material Release

- 1. The spill could result in release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.
- 2. The spill could cause the release of toxic liquids or fumes.
- 3. The spill can be contained on-site, but the potential exists for groundwater contamination from the spill.
- 4. The spill cannot be contained on-site, resulting in off-site soil contamination and/or ground or surface water pollution.
- 5. The Contingency Plan will be implemented if a reportable quantity under the CWA, CERCLA or SARA is released.

#### C. <u>Natural Disaster</u>

In the event of imminent destruction from natural occurrences, the EMERGENCY HURRICANE/TORNADO PROCEDURES (Exhibit H-2) will be consulted, and the Contingency Plan implemented as required at the discretion of the Plant Manager.

1. Hurricane - A hurricane is within 100 miles of Baton Rouge and is moving towards Baton Rouge. (Consult EMERGENCY HURRICANE/TORNADO PROCEDURES, Exhibit H-2).

- 2. Tornado A tornado has been sighted within a five-mile radius of the plant. (Consult EMERGENCY HURRICANE/TORNADO PROCEDURES, Exhibit H-2).
- 3. Flooding The facility is located above the 100 year flood plain, so the potential of a flood is small. However, due to intense storm events which are characteristic of Louisiana weather, on-site flooding is possible.

#### IV. COMMUNICATIONS SYSTEMS

#### A. <u>In-Plant Communications</u>

- 1. In-plant telephone system which is equipped with an uninterrupted power source.
- 2. In-plant radio system. The facility operates a handheld radio system. Approximately 30 personnel are assigned radios. Units are maintained at all times in the Security Vehicle, Receptionist office, Guard Gate office and the Control Room. This will be the system used during the functioning of the facility.
- 3. Emergency Alarm System activated manually from the Control Room.
- 4. In-plant public address system accessible from any in-plant telephone.

#### B. Out of Plant Communications

- 1. Conventional telephones are located throughout the plant.
- Two direct line phones are located in the Guard House, including the "red phone" reserved specifically for emergencies. One of these direct lines is connected to the Control Room as well.

# V. PRIOR NOTIFICATION AND ARRANGEMENTS WITH LOCAL AUTHORITIES AND RESPONDERS

The following organizations have been contracted by Rollins and been given a copy of the Contingency Plan for review and reference. They have agreed to assist in emergencies at Rollins Environmental Services (LA), Inc. as required.

- A. Brownsfield Volunteer Fire Department: The primary respondent for our district. They have responded to calls for assistance in the past and would respond to future calls for fire and ambulance services (383-4425).
- B. Baker Fire Department: Has responded to calls in the past and would assist Brownsfield if called (775-3711).
- C. Louisiana State Police Hazardous Materials Unit: Has also been contacted and would respond to assist in the protection of property and the public as deemed necessary (925-6113).

- D. East Baton Rouge Parish Sheriff (Scotlandville): Has responded to calls for in the past and would respond to future calls (778-0700).
- E. Lane Memorial Hospital (654-4511) and the Baton Rouge General Hospital (387-7600): Have also assisted in the past with medical treatment and will continue to offer treatment services as necessary.
- F. Mutual Aid: Will respond with emergency equipment (343-4805).

#### VI. PROCEDURE IN THE EVENT OF AN EMERGENCY SITUATION

#### A. Weekdays

#### 1. <u>Immediate Action</u>

- Any employee who observes or otherwise detects an emergency situation shall immediately warn others working nearby and notify his supervisor (Closure Coordinator, after facility is closed) using the quickest available means.
- b. The supervisor shall inform the Plant Manager or the alternate Emergency Coordinator (Closure Coordinator, after facility is closed) immediately who will determine if the Contingency Plan should be implemented.

The supervisor should provide the following information to the Plant Manager or the alternate Emergency Coordinator:

- 4) I need the following help: <u>Fire Brigade</u>, <u>Ambulance</u>, <u>Rescue</u>.
- 5) DO NOT HANG UP UNTIL THE INFORMATION HAS BEEN REPEATED.
- c. The Plant Manager or his alternate shall appraise the situation and determine whether to 1) implement the Contingency Plan, 2) Sound the EMERGENCY SIGNAL to evacuate the plant, 3) call for outside assistance, or 4) handle the emergency on-site without implementation of the Contingency Plan.

- d. If total or partial evacuation of the plant is required, the EMERGENCY SIGNAL will be sounded:
  - The Emergency Organization personnel will assume their responsibilities.
  - Refer to EVACUATION PROCEDURES (Exhibit H-3) for complete evacuation procedures.

All plant employees except those involved as Emergency Coordinator and Emergency Response personnel will assemble immediately at the Main Office building. If the wind direction is such as to prohibit this assembly point, employees should proceed to the Sussex parking lot. In the extremely unlikely event that both those assembly points are endangered, the third assembly point is the intersection of the main plant entrance road and Sussex Road. The Emergency Coordinator or the Safety Manager will determine if an assembly point is unsafe. Further evacuation instructions are included in the EVACUATION PROCEDURES attachment of this plan. At the EMERGENCY COORDINATOR'S direction, evacuees will proceed to the Personnel Reporting location.

All Contractor Personnel will assemble at the designated Contractor Parking Lot. They will utilize the same alternate sites as RES personnel should the Contractor Parking Lot be endangered.

- e. The EMERGENCY COORDINATOR will notify the emergency organization staff of the emergency situation by radio or by public address system.
- f. The main gate at Scenic highway should be closed. The guard stationed at the gate will give directions to outside help which arrives and control unauthorized entry.
- g. Outside assistance will be called for at the Plant Manager's or Emergency Coordinator's direction. Local agencies (fire, police, hospital) and Mutual Aid are available. See the Communication Section (IX) of this plan for a complete list. The following information should be transmitted to outside responders:
  - 1) Caller's name and telephone number from which he is reporting.
  - 2) Name and address of the facility.
  - Time, type and current condition of the incident (for example, release, explosion, fire, etc.) and location on the site.
  - 4) Name and quantity of materials involved to the extent known.

- 5) The possible hazards to human health or the environment outside the facility and indications of spread of emergency (wind direction, water run-offs, etc.)
- 6) The extent of injuries (if any) -- and the medical help needed (ambulance, alert hospitals, doctors, emergency rescue teams, etc.)

#### Notification of Appropriate Outside Agencies

The Emergency Coordinator will notify the proper authorities as detailed in the EMERGENCY ORGANIZATION Section which describes the responsibilities of the Emergency Coordinator (Exhibit H-1). Agencies to be immediately contacted, as necessary, include:

Brownsville Volunteer Fire Department - 383-4425 Louisiana State Police Hazardous Materials Unit - 925-6113 East Baton Rouge Sheriff's Office (Scotlandville) - 778-0700

#### 3. Shutdown of Operations

When the EMERGENCY SIGNAL is sounded, or as directed by the radio or public address system, all plant operations will be stopped. Shutdown will be as follows by area operating personnel prior to evacuation.

- a. Maintenance and Contractors: All machinery will be shut down.
- b. <u>Trucks & Automobiles</u>: All trucks and automobiles will have their engines turned off and the vehicle will be left where it stands unless it blocks or impairs traffic routes. The Emergency Coordinator, after assessing the situation, may direct relocation or removal of vehicles and the closing or opening of tank and truck vents.
- c. <u>Landfill Leachate</u>: Landfill leachate pumping will be shut down.

#### 4. <u>Control Measures</u>

#### a. Fire

Exhibit H-4, FIRE RESPONSE PROCEDURES, gives details on the organization, equipment, and procedures available for prevention and extinguishment of fires in the plant. Fire Brigade organization is addressed in the FIRE RESPONSE PROCEDURE Exhibit. A fire monitor system is in place throughout the facility. The FIRE RESPONSE Exhibit describes the system and location of monitors. The plant has the following equipment available for fire response:

- An in-plant fire truck.
- A fire water system.

- Fire extinguishers throughout the plant (Location and description in FIRE RESPONSE PROCEDURE Exhibit).
- Cooperation agreements for assistance from the Baker Fire Department and the Baton Rouge Fire Department have been established.

#### b. Spills

All spills should be reported to the Environmental Affairs Manager (Closure Coordinator, after facility is closed) as soon as possible.

If a spill of reportable quantity should occur, the provisions of the SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN (SPCC): (Exhibit H-5) shall go into effect immediately. As stated in the SPCC, first response to any spill after protection of human safety will be to stop and/or contain the spill.

#### c. Releases to the Air

Exhibit H-5 outlines the methods used to prevent releases of harmful concentrations of pollutants to the atmosphere and outlines the actions which must be taken if a release occurs or is considered to be probable. Control mechanisms to reduce the likelihood and/or severity of a release include:

- 1) A negative draft is maintained in the incinerator.
- 2) Opening of containers is kept to a minimum.
- 3) Incinerator tank farm system is vented to the incinerator with carbon adsorption beds as a backup.
- 4) The shredders are vented to the incinerator with carbon bed absorption as a backup.
- 5) Carbon canisters are used when appropriate with vacuum trucks.

#### B. Nights, Week-ends, and Holidays

#### 1. Warnings, Evacuation and Assembly

Any employee who observes or otherwise detects an emergency situation shall immediately warn others working nearby and inform the Shift Supervisor (Closure Coordinator, after facility is closed), who will serve as EMERGENCY COORDINATOR as described in the EMERGENCY ORGANIZATION Section, by the quickest available means (telephone, radio). The Shift Supervisor will sound the EMERGENCY SIGNAL by manually pushing the "Red Button" in the Control Room (or order it sounded) if the emergency is determined to warrant evacuation.

All personnel in the plant, upon hearing the EMERGENCY SIGNAL, shall assemble immediately at the Main Office. If the wind direction is such as to prohibit this assembly point, employees should proceed to the Sussex parking lot. In the extremely unlikely event that both those assembly points are endangered, the third assembly point is the intersection of the main plant entrance road and Sussex Road. The Emergency Coordinator or the Safety Manager will determine if an assembly point is unsafe. Further evacuation instructions are included in the EVACUATION PROCEDURES, Exhibit H-3, of this plan.

Upon sounding of the EMERGENCY SIGNAL, the following actions will be taken, in addition to the shutdown of operations and control measures described in Sections A.3 and A.4.

#### 2. Reporting and Requesting Help

a. Procedures if Contingency Plan IS NOT implemented:

If, in the judgement of the Shift Supervisor (Closure Coordinator, after facility is closed), the situation is not likely to be immediately dangerous to life or health, he or his designee shall call the Plant Manager for advice and assistance. He should be prepared to give details as requested. If unable to contact the Plant Manager, the Shift Supervisor (Closure Coordinator, after facility is closed) should call the Operations Manager.

Name and
Position
Pager

Vice President/
Plant Manager

Operations and 338-7166

Maintenance Manager

operating areas are listed.

A list of additional Rollins Environmental Services (LA), Inc. emergency response personnel is found in the COMMUNICATIONS/EMERGENCY CALL Section. Personnel responsible for specific

#### b. Procedures if Contingency Plan IS implemented

If, in the judgement of the Shift Supervisor (Closure Coordinator, after facility is closed) when acting as the Emergency Coordinator, the situation is likely to quickly develop into one where the Contingency Plan should be implemented or where significant help is needed to prevent or respond to serious injury, damage to facilities or environmental pollution, he shall immediately telephone MUTUAL AID at telephone number 343-4805 and provide the following information:

- 1) Caller's name and telephone number from which he is reporting.
- 2) Name and address of the facility.
- Time, type and current condition of the incident (for example, release, explosion, fire, etc.) and location on the site.
- 4) Name and quantity of materials involved to the extent known.
- 5) The possible hazards to human health or the environment outside the facility and indications of spread of emergency (wind direction, water run-offs, etc.).
- 6) The extent of injuries (if any) -- and the medical help needed (Ambulance, alert hospitals, doctors, emergency rescue teams, etc.).
- c. If any difficulties should arise on contacting MUTUAL AID, the Shift Supervisor (Closure Coordinator, after facility closure) may call for aid directly by referring to the Emergency Call List in the EMERGENCY CONTACTS AND TELEPHONE NUMBERS Exhibit, if the overall facility is still operating.
- d. If management has not already been contacted, the Shift Supervisor (Closure Coordinator, after facility closure) should do so now as shown in the EMERGENCY CONTACTS AND TELEPHONE NUMBERS Exhibit.
- e. The Shift Supervisor (Closure Coordinator, after facility closure) should designate someone to remain close to Telephone Number 778-1234 to receive incoming calls.
- f. The Shift Supervisor (Closure Coordinator, after facility closure) shall assume the duties of Emergency Coordinator until relieved by the Emergency Coordinator, or the assigned Alternate Coordinator.

#### VII. BOMB THREAT

In the event of the receipt of a Bomb Threat, procedures are outlined in Exhibit H-7. Forms are provided in the attachment to record the details of the telephone call.

As instructed in the BOMB THREAT Section, the following personnel should be notified immediately after receipt of the threat:

Name and Position	<u>Pager</u>	In-Plant <u>Number</u>
Vice President/Plant Manager	338-7164	501
O&M Manager	338-7166	586
Safety Manager	338-7726	608
Environmental Office Manager	338-7165	610
Shift Supervisor on Duty (Control Room Number)		729

#### VIII. WATERWORKS WARNING NETWORK PLAN

If Rollins has knowledge of any discharge from the site of toxic or hazardous materials which could enter the Mississippi River, the State of Louisiana Office of Health Services and the Department of Environmental Quality and downstream users must be notified. These procedures are outlined in Exhibit H-8 of the Contingency Plan.

#### IX. UNINTERRUPTIBLE POWER SUPPLY SYSTEM

The plant is equipped with an uninterruptible power supply system (UPS). The UPS system is designed to provide continuous 120 volt power to the operating controllers during a utility power outage or disruption, thus protecting equipment and facilities that could result in harm to personnel and/or the environment. The UPS system is thoroughly described in SPI #000-03, dated March 10, 1988.

#### X. AMENDMENT OF CONTINGENCY PLAN

The Contingency Plan must be reviewed, and immediately amended, if necessary, whenever:

- A. Applicable regulations are revised;
- B. The plan fails in an emergency;

- C. The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- D. The list of emergency coordinators changes; or
- E. The list of emergency equipment changes.

EXHIBIT H-1

SWP-5019 EMERGENCY ORGANIZATION

#### ATTACHMENT I

#### SWP-5019 EMERGENCY ORGANIZATION

## I. Staff Emergency Organization Positions

An emergency organization has been set up under the direction of an Emergency Coordinator, with the following emergency positions:

Emergency Coordinator
Protection Chief
Services Chief
Transportation Chief
Contract Coordinator
Personnel & Public Relations Chief
Communications Chief

Exhibit I-1, attached, gives personnel appointments to these positions.

#### II. Responsibilities of Staff Emergency Organization Positions

There will be at least one employee at the facility at all times who will be designated as the Emergency Coordinator. The Emergency Coordinator will be thoroughly familiar with all aspects of the facility's Contingency Plan, and all operations and activities at the facility, the location and characteristics of wastes, the location of all records within the facility, and the facility layout.

## Emergency Coordinator

Organizes and directs all emergency control activities prior to, during, and after an emergency until relatively normal conditions are restored. Usually stationed at Headquarters (primary or secondary) where he maintains control and coordinates activities between groups (Refer to Exhibit I-2).

## Protection Chief

Responsible to Coordinator only for fire-fighting, rescue, and plant security. Coordinates with trained outside fire and rescue crews. Usually stationed at the scene.

#### Services Chief

Responsible to Coordinator for maintaining and restoring buildings, equipment, water for fire-fighting, and power and utilities, if damaged or disrupted. Also responsible for detection

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment I

and assessment of special chemical, biological hazards and decontamination of personnel and equipment, if required. Should be thoroughly familiar with operations and maintenance, usually stationed at Headquarters with Coordinator early in emergency and moves to scene later to coordinate restoration.

#### Transportation Chief

Responsible to Coordinator for controlling and maintaining all communications and transportation equipment and personnel. Assists Protection and Services Chiefs by furnishing mobile communications at the scene, radios, messengers, etc., and by transportation of personnel and supplies for fire-fighting, and special equipment for restoration. Also responsible for coordination of ambulance services and transportation of injured.

### Contract Coordinator

Responsible for efficient check-out of contractor personnel and accountability of same to Coordinator.

#### Personnel Chief

Responsible to Coordinator for conducting prompt, accurate personnel count to establish casualties, and for quickly establishing main gate control to keep curious and unnecessary persons out of the plant for their own protection. Assists other chiefs by maintaining "pool" of employees (unassigned) including off-duty returnees until requested for assignment. Also responsible for the personal notification of next of kin of any deceased, missing, or seriously injured personnel.

#### Public Relations Chief

Responsible, under direction of Plant Manager, for cordial reception and protection of news media personnel and strict approval of all statements issued to them.

Note: No names of personnel casualties are to be released to outsiders, including press media, until the Personnel Chief has personally notified the Regional Vice President that all families or next of kin have been informed.

#### Communications Chief

Responsible for manning telephone and informing callers there is an emergency in progress and they should return the call at a later time.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment I

# EXHIBIT I-1 EMERGENCY ORGANIZATION STAFFING

Position in the Emergency Organization	Name	Primary Address	<u>Home</u> Telephone
Emergency Coordinator	T. Bramlette	530 Castle Kirk	767-0135
Alternate	On Shift Supry*	Baton Rouge, LA 70808	
Protection Chief	J. Bourg	861 Voorhies	273-1915
Alternate	M. Higgs	Baton Rouge, LA 70815 9411 Sagefield Dr. Baton Rouge, LA 70818	261-3781
Service Chief	J. Richards	15541 Malvern Hill	295-3959
Alternate	R. Hayes	Baton Rouge, LA 13574 Minor Avenue Baton Rouge, LA	275-6187 295-5515
Transportation Chief	J. Richardson	4529 Little Farms	654-8156
Alternate	J. Arbuthnot	Zachary, LA 17218 Sharpsburg Baton Rouge, LA	292-2927
Contract Coordinator	R. Hays	13574 Minou Ave.	295-5515
Alternate	P. Kimble	Baton Rouge, LA 13211 Camelot Baton Rouge, LA	275-7559
Personnel Chief	T. Eastman	10914 Maybell Ct	292-0735
Alternate	E. Chevalier	Baton Rouge, LA 8519 Scarlett Baton Rouge, LA	923-3963
Communications Chief	J. Cope	3922 Emily	749-2671
Alternate	P. Bevars	Port Allen, LA 3232 Richmond Baton Rouge, LA	291-0159
Public Relations Chief	M. Higgs	9411 Sagefield	261-3781
Alternate	J. Bourg	Baton Rouge, LA 861 Voorhies Baton Rouge, LA	273-1915
Insurance Department	L. Moroz J. Burns	One Rollins Plaza Wilmington, DE 19899	479-2700 (302)

<sup>\*</sup>Shift Supervisor is the Emergency Coordinator at night, on week-ends, or holiday until relieved.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment I

#### <u>EXHIBIT 1-2</u> EMERGENCY COORDINATOR DUTIES

- A. Whenever there is an imminent or actual emergency situation which requires implementation of the Contingency Plan, the Emergency Coordinator (or his designee when the Emergency Coordinator is on call) must immediately:
  - Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel, implement contingency, and
  - Notify appropriate State or local agencies with designated response roles if their help is needed. These agencies include Baton Rouge Mutual Aid (343-4805), Louisiana State Police Hazardous Materials Unit (925-6113), LADEQ (342-1234), and the National Response Center (1-800-424-8802), EBR Civil Defense Agency (389-3035) and BRFD Hazardous Material Unit (389-4600).
- B. Whenever there is a release, fire, or explosion, the Emergency Coordinator must immediately identify the character, exact source, amount, and a real extent of any released materials. He may do this by observation or review of the Waste Safety Sheets.
- C. Concurrently, the Emergency Coordinator must assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment must consider both direct and indirect effects of the release, fire or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions.
- D. If the Emergency Coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:
  - If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify:

MUTUAL AID (343-4805). La. State Police Hazardous Materials Unit (925-6113), LADEQ (342-1234), EBR Civil Defense Agency (389-4600). National Response Center (1-800-424-8802),

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment I

- 2. He must submit the following information to the agencies listed above in D-1:
  - (i) Name and telephone number of reporter;
  - (ii) Name and address of facility;
  - (iii) Time and type of incident (e.g., release, fire, );
  - (iv) Name and quantity of material(s) involved, to the extent known;
  - (v) The extent of injuries, if any; and
  - (vi) The possible hazards to human health, or the environment, outside the
- E. During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.
- F. If the facility stops operations in response to a fire, explosion or release, the Emergency Coordinator must monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.
- G. Immediately after an emergency, the Emergency Coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.
- H. The Emergency Coordinator must ensure that in the affected area(s) of the facility:
  - No waste that may be incompatible with the released material is treated, stored, or disposed of until clean-up procedures are completed; and
  - All emergency equipment listed in the Contingency Plan is cleaned and fit for its intended use before operations are resumed.
- I. The Emergency Coordinator must notify the Regional Administrator of the EPA, and appropriate State and local authorities, that the facility is in compliance with paragraph (H) of this Section before operations are resumed in the affected area(s) of the facility.
- J. The Emergency Coordinator must note in the operating record the time, date and details of any incident that requires implementing the Contingency Plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator of the EPA, LADEQ Headquarters and Regional Office, LA State Police Hazardous Materials Unit and EBR Parish Fire Department. The form at the end of this section may be used to notify the LADEQ (Form AD-12/7/87).

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment I

## Copies of the report should be sent to:

Regional Administrator USEPA Region VI First International Building Dallas, TX 75270

Headquarters
Louisiana Department of Environmental Quality
P.O. Box 94066
Baton Rouge, LA 70804-4066

LADEQ Air Division P. O. Box 44096 Baton Rouge, LA 70804-4096

Capital Regional Office LADEQ 11720 Airline Highway Baton Rouge, LA 70817-1720

Louisiana State Police Hazardous Materials Unit P. O. Box 66614 Baton Rouge, LA 70896

East Baton Rouge Civil Defense Agency 222 St. Louis Street, Room B-230 Baton Rouge, LA 70821

Baton Rouge Fire Department Hazardous Materials Unit 2323 Florida Blvd. Baton Rouge, LA 70802

Brownsfield Fire Department 11420 Piank Road Baton Rouge, LA 70811 Regardless of what form is used, the following information must be included:

- 1. Name, address, and telephone number of the owner or operator;
- 2. Name, address, and telephone number of the facility;
- 3. Date, time and type of incident (e.g., fire, explosion);
- 4. Name and quantity of material(s) involved:
- 5. The extent of injuries, if any;
- An assessment of actual or potential hazards to human health or the environment, where
  this is applicable: and
- 7. Estimated quantity and disposition of recovered material that resulted from the incident.
- K. The Corporate Insurance Department must be notified of the incident.

#### AIR QUALITY DIVSION

#### REGIONS BY PARISHES

Ben Potier
ACADIAN REGIONAL OFFICE
100 Eppler Road
Lafayette, LA 70505-0100
Phone: 318-265-5584
Linc: 8-328-5584

Acadia Avoyelles Evangeline Iberia Lafayette St. Landrý St. Martin St. Mary Vermilion

Bill Davis
CAPITAL RECIONAL OFFICE
11720 Airline Highway
Baton Rouge, LA 70817-1720
Phone: 504-295-8900
Linc: 8-426-8900

Ascension
Assumption
E. Baton Rouge
E. Feliciana
Iberville
Livingston
Pointe Coupee
St. Helena
St. James
Tangipahoa
W. Batom Rouge
W. Feliciana

Bob Wasconick
SOUTHEAST REGIONAL OFFICE
3945 North 1-10 Service Road/West
Metairie, LA 70002-3945
Phone: 504-838-5361
Linc: 8-637-5361

Jefferson Lafourche Orleans St. Bernard St. Charles St. John St. Tammany Terrebonne Washington Plaquemines

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment I Paul Laird NORTHEAST REGIONAL OFFICE 804 31st Street P. O. Box 8475 Honroe, LA 71211-8475 Phone: 318-362-5439 Linc: 8-266-5439

Caldwell
Catahoula
Concordia
E. Carroll
Franklin
LaSalle
Madison
Morehouse
Ouachita
Richland
Tensas
Union
W. Carroll

Robert McMullen NORTHWEST REGIONAL OFFICE 1525 Fairfield Street, Room II Shreveport, LA 71130 Phone: 318-226-7476

Bienville
Bossier
Caddo
Claiborne
DeSoto
Jacksen
Lincoln
Natchitoches
Red River
Sabine
Webster
Winn -

Linc: 8-521-7476

William Coltrin SOUTHWEST REGIONAL OFFICE P. O. Box 3047 Lake Charles, LA 70601-3047 Phone: 318-491-2082 Linc: 8-361-2082

Allen
Beauregard
Calcasieu
Cameron
Grant
Jeff Davis
Rapides
Vernon

## DEQ/AQD EMERGENCY OCCURRENCES AND/OR UPSET NOTIFICATION FORM

1 of 2

	Name			
Physics	Location			
St. or	P. O. Box			
City, S	ate, & Zip Gode			
Telepho	ne No.		<del></del>	<u> </u>
Date at	i time of call			
DEO off	icial contacted			
Company	icial contacted official who made the	call		
Applica	ole permit # involved?			
Emissic	point source(s) invo	lved? (including	the process unit	and EIQ number
applica	ole)			
pplicat	le Air Quality regulat	ions involved?:		
				_
Unset (	escription, cause, and	what offsite im	nact resulted?:	-
obser o	escription, cause, and	Austonisice im	pact resurted::	
				<del></del>
				<u></u>
	· · ·			
Give th				
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Give th				
Which a	e date and time the re	lease began and	length of time it	lasted:
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	e date and time the re	lease began and	length of time it	lasted:

Rollins Environmental Services (LA) Inc. Contingency Planning - Attachment I

2 of 2 MUD-12/1/00 EMERGENCY OCCURRENCES AND/OR UPSET NOTIFICATION FORM IX. What other agencies were notified?\_\_\_\_ Immediate corrective action taken? I. XI. Specific actions taken and/or planned to prevent recurrence? (Include timetable for completion of project if applicable). 1 5 XII. Regulation notification requirement(s)? /\_\_\_/ LAC 33:III.927 /\_\_\_/ LAC 33:III.3925 XIII. Company Official: Signature \_\_\_\_\_ Date \_\_\_\_ Title \_\_\_\_\_

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment I

EXHIBIT H-2
EMERGENCY HURRICANE/TORNADO PROCEDURES

#### ATTACHMENT II

### EMERGENCY HURRICANE/TORNADO PROCEDURE

PURPOSE: To provide a systematic action plan to protect personnel and equipment in the event of a hurricane.

OBJECTIVE: To have all plant shutdown operations complete and all personnel secured prior to wind velocities reaching hurricane force.

GENERAL 1. Hurricane definition: Winds in excess of 75 mph.

The five conditions covered by the procedure are:

A CAUTION - Hurricane within a 500 mile radius and heading toward Baton Rouge.

B. STAND-BY - Hurricane within a 300 mile radius and heading toward Baton Rouge.

C. ALERT - Hurricane within a 200 mile radius and heading toward Baton Rouge.

D. ACTION - Hurricane within a 100 mile radius and heading toward Baton Rouge.

E. DANGER - Hurricane has hit area with over 75 mph winds.

The initial response (tracking) to hurricane conditions will begin when the a hurricane is within a 500 mile radius and heading toward Baton Rouge. The Contingency Plan will be implemented if a Level "D" condition develops.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

#### **EMERGENCY PLAN**

This emergency plan is based on the adequate advance warnings of impending, but slow-moving, hurricanes. Because of the early advance warnings, battening down operations, evacuation of non-essential personnel, etc., can be accomplished.

This emergency plan will go into effect when the hurricane is within a 500 mile radius and heading toward the Baton Rouge area. The Control Center located at the Safety Office will be manned by members of the emergency staff when the hurricane is within a 200-mile radius and heading toward the Baton Rouge area, or as directed by the Emergency Coordinator. The Control Center personnel will be in control of the plant operations and action taken during the hurricane.

The conditions which may exist as the result of a hurricane are listed in the four following categories:

### I. CAUTION

Condition:

Hurricane enters Gulf of Mexico and is a maximum of 500 miles from New

Orleans

Action:

Safety Manager will start tracking hurricane. This tracking will be done on the "Storm Preparation Check Sheet". All parties will initiate a general

housekeeping campaign.

#### II. STAND-BY

Condition:

Hurricane within a 300-mile radius and heading toward Baton Rouge area. (Between longitudes 85.0°W and 95.0°W and above latitude 25.0°N)

Action:

- Emergency staff notified to be on the alert to assemble at Control center if necessary.
- Operation and Maintenance Manager and Area Supervisors will be notified to check supplies in their areas. If supplies are needed, draw them from the Warehouse or call Purchasing and request supplies.
- Alert all persons involved to start securing the plant and equipment, such as:
  - a. Move all empty drums, pallets, boards, etc., inside buildings,
  - b. Remove all unprotected scaffolds.
  - Board-up all windows in areas housing personnel or where valuable material and equipment could be damaged.
  - d. Secure cranes.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

- Check emergency communications equipment such as extra radios and batteries.
- Fuel up mobile equipment and provide an emergency supply of fuel.
- 4. Call all contractors to secure construction equipment and material.
  - All portable buildings, trailers, lean-to's must be anchored to the ground.
- 5. Call utility company to check equipment.
- 6. Check all auxiliary equipment.
- Check conditions and supplies of all safety equipment, fire fighting
  equipment, and first aid supplies. Immediately order any such items
  which may be in short supply.
- Call all vending machine companies for keys to machines in plant: have them completely fill all machines.
- 9. Check drainage to make certain there are no obstructions.

## III. ALERT

Condition:

Hurricane within a 200-mile radius heading toward the Baton Rouge area. (Between longitude 88 \* and 92 \* North and North of 27 \* latitude.)

Action:

- 1. Emergency staff assembles at Control Center as required.
- Emergency staff members will contact their respective departments.
   advise them of the "Alent" condition.
- Determine how many maintenance employees must be kept on plant should the hurricane hit in full force.
  - a. Call off-duty personnel if needed.
  - Personnel not needed will be sent home or to shelters. This includes construction personnel.
- No visitors will be allowed in the plant if preparation efforts are underway.
- 5. Provide cots, etc., for shelter areas (if necessary).

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

- Distribute food supplies to shelter areas (if necessary).
- 7. Obtain an emergency supply of drinking water.
- A television set and battery-operated radios will be sent to the Control Center.

#### IV. ACTION

Condition:

Hurricane within a 100 mile radius and heading toward Baton Rouge.

Action:

- Shutdown plant operations in accordance with departmental programs.
  - a. Begin circulation operations and stand-by for plant shut-down.
  - b. Plant shut-down.
- Advise management on certain steps which could be taken to minimize property damage, such as:
  - a. Fill all empty storage tanks with water, or equalize material in tanks, as compatibility allows, so that none would be completely empty. The exceptions to this are the following tanks: TK-5950 - Wasteweater Storage Tank, TK-5303 -Wastewater Collection Tank, and the outfall collection tanks Tk-5310, TK-5311, and Tk-5312. The capacity of these tanks must be reserved to collect stormwater and hold treated wastewater prior to discharge.
  - b. Empty pipe lines of material; if possible, or desirable.
  - Best measure of maintaining the most effective method of drainage to prevent flooding.
- Coordinate all emergency activities at this time and make certain that procedures are being followed.
- Inspect Tank Farm and all transfer facilities to assure everything is secure, such as load lines disconnected, tank cars are braked, etc.
- 5. All vehicles will be secured inside plant buildings if possible.
- As soon as possible, employees involved in plant shut-down will go
  to their designated shelter according to the departmental program
  after the department is secure.
- Maintenance mechanics will report to the Control Center as soon as plant shut-down operations are complete.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

August. 1989

# UNTIL THIS FINAL APPROVAL IS OBTAINED, ALL WORKERS EMPLOYED IN THE STORM PREPARATION WILL BE RETAINED ON THE JOB.

#### V. DANGER

Condition:

A hurricane has hit the area with over 74 miles per hour winds,

Action:

- 1. The Emergency Coordinator and staff will:
  - Remain in emergency operations room.
  - b. Make decisions as situations arise.
  - c. Maintain a list of all employees on the plant site.
- 2. All other employees left on plant will:
  - a. Stay inside if at all possible.
  - b. Stay off elevated structures, especially out in the open.
  - c. If one must venture outside, he must have a rope tied around his waist with another employee at the other end.
  - d. Perform only that work, especially maintenance, which is absolutely necessary.
  - All employees will be expected to stay on the plant for the duration of the hurricane.

#### VI. POST STORM\_PROCEDURES

Condition:

The center of the hurricane has passed and winds have subsided below 50 miles per hour.

## Action:

- 1. The Emergency Coordinator will:
  - a. Form groups and survey the plant premises for damage.
  - b. If the plant, or parts of the plant, has been shut down, assess damage, if any, and make plans for repair and startup.
  - Make plans to relieve any employees who have been on duty 16 hours or longer.
  - d. Have the responsibility of releasing all information to employees families and relatives.
  - Have the responsibility for release of all information to news media after clearance with the Emergency Coordinator.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

## STORM PREPARATION CHECK SHEET AND INSPECTION

A check sheet has been provided to insure that storm preparations are promptly and properly made. This check sheet will be used as a guide in preparations for storms. When preparations are complete, the Operations and Maintenance Manager or Safety Manager will give this completed check sheet to the Emergency Coordinator. The Emergency Coordinator and the Maintenance Manager will then inspect the preparations together. After this inspection, the Emergency Coordinator will be asked to approve the storm preparations.

vi

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

#### Wind Storms - Tornadoes

## I. Tornado Procedure:

#### A. General Information

Tornadoes usually cover an area about 300 yards with winds up to 300 miles per hour or more. These storms appear in the form of a heavy narrow cloud called a funnel which extends downward from a heavy dark mass of clouds. These storms follow a very irregular path, touching down to the ground and then rising, then touching down again. They generally have a short life, and the average tornado sweeps a path 16 miles long moving at an average speed of 25 to 40 miles per hour, generally in a northeasterly direction.

## B. Introduction

A tornado "watch" is declared by the Weather Bureau at Ryan Airport in Baton Rouge whenever tornadoes are expected to develop. A tornado "warning" broadcast means a tornado has actually been sighted.

These conditions will apply to a specific geographical location. These alerts are broadcast over the Weather Radio Channel radio network which is monitored by the plant.

### C. Procedure:

- Upon receiving a report of a tornado <u>warning</u> in the area, all departments will immediately be notified by radio or public address system.
- When notified of an approaching tornado, supervision in all departments will immediately have all personnel take shelter in firmly constructed buildings.
   All personnel in trailers should immediately evacuate to permanent buildings.
- All personnel taking shelter in buildings should seek the southwest corner
  of the building, staying away from windows as much as possible.
- Move at right angles to the tornado's path. If there is no time to escape, lie flat in the nearest depression such as a ditch or curbing and be alert for possible flooding.
- If time permits, shutdown of operations as described in Section V1.A.3 (Page 6) of this plan will be conducted.

## STORM PREPARATION CHECK SHEET

## A. The following materials have been secured:

	•	CHECK IF
1. Drums		
2. Buckets_		
3. Boxes		
4. Plywood_		
5. Plywood	Forms	
6. Sheet Me	tal	
7. Lumber	·	<u> </u>
8. Scaffold	ing	
9. Metal &	Transite Siding	
	<u> </u>	
	ins	
13. Portable	Buildings	1
14. Trailers	·	1
15. Lean-Toʻ	5	
16. Travel C	ans	
	ressors	
	Machines	<u> </u>
		<u> </u>
	Tows	
	Buggies	
22. Process	Tanks & Bins	
23. Sheetmet	al Equipment	<u> </u>
	riven Equipment	!
25. Beavy Co	onstruction Equipment	
<ol><li>Compress</li></ol>	sed Gas Bottles	<u>i                                      </u>
B. Utilities	•	
1. Electricit	ty is off	
C. Security		
1. All gates	are locked	
<del>-</del>		

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

#### HURRICANE PREPAREDNESS CHECK LIST

	······································	
		CHECK IF
STA	<u>215-57</u>	COMPLETE
1.	General housekeeping - all areas	
2.	Dispose of all possible trash	
3.	Dismantle scatiolds, signs, etc.	
4.	Storeroom supplies	
5.	Emergency equipment	
ALE	<u>ET</u> and a substitution of the substitution of	
1.	Move all items possible into buildings	
2.	Fuel all vehicles	<del></del>
3.		
4.	Emergency lighting 6 radio checked out	
5.	Emergency lighting 6 radio checked out	
6.	Potable water in control rooms	l
7.	Secure & install ropes for lifelines	
8.	Check tank farm and storage vessels	1
9.	All loading & unloading facilities secure	
10.	Hand brakes set on all tank cars	
11.	All exposed windows taped, equipment covered	
12.	All construction equipment secured, protected	
13.	All buildings secured, miscellaneous material inside	
14.	list of personnel in plant	
15.	Notify incoming shift when to report	
16.	All mobile equipment inside or protected	
17.	Utilities our off to construction site	-
ACTI	<u>0x</u>	}
1.	Assign duties to personnel in the plant	j.
2.		
3.	Send unnecessary Maintenance employees home	
4.		
5.	Shut down order or all units	
6.	Names of all personnel in the plant	
7.		
8.	Schedule Production & Maintenance workers after storm	· ·

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

# STORM PREPARATION CHECK SHEET

DATE		TYPE	STORM:		
NAME	OF STORM	DATE	REPORTED	IN GULF:	<del></del>
DATE	AND TIME STORM PREPARATIONS	BEGUN:			
DATE	AND TIME WORKS MANAGER NOTIFIED THAT STORM PREPARATIONS WILL				
DATE	AND TIME APPROVAL OF PREPARA OBTAINED FROM WORKS MANAGER	TIONS			

TRACKING					
		POSITION		HIGHEST	ESTIMATED TIME OF
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Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment II

EXHIBIT H-3 EVACUATION PROCEDURES

## ATTACHMENT III

## **EVACUATION PLAN**

The decision to evacuate the entire plant or isolate and evacuate one or more operating areas will be made by the Emergency Coordinator. The Emergency Coordinator will base his assessment on the risks to personnel after evaluating the extent of an explosion, air release, fire or other emergency situation.

Plant shutdown or evacuation instructions will be given by in-plant radio or public address system after sounding of the emergency signal. The Emergency Signal shall be the indication for all personnel to assemble immediately at the main office. If conditions are such as to prohibit this assembly point, employees should proceed to the Sussex parking lot. In the extremely unlikely event that both assembly points are endangered, the third assembly point is the intersection of the main plant entrance road and Sussex Road. Personnel will leave the plant via the main plant entrance road as directed by the Emergency Coordinator. Once outside the facility, personnel will assemble at the Personnel Reporting Location for a headcount. Unless otherwise instructed, the Personnel Reporting Location will be the Contractors' Parking Lot near the Guard House. (See Exhibit III-1 at the end of this section for evacuation assembly points).

Contractors should assemble at the designated Contractor Parking Lot. They will utilize the same alternate sites as Rollins personnel should the contractor parking lot be endangered.

The following method of evacuation will be used for a complete plant evacuation:

- 1. The guards will immediately close the gates. No further entrance of visitors, contractors or trucks will be permitted. All vehicle traffic in the plant should have ceased when the initial alarm was sounded. This allows safe exit of personnel and movement of emergency equipment.
- 2. No person shall remain in the plant or re-enter the plant unless the Emergency Coordinator or his designee has authorized this action. Those within the plant will normally include the fire brigade (emergency team) and Emergency Coordinator and the Emergency Organization Staff as designated in Attachment I of the Contingency Plan.
- 3. All persons will be accounted for by their immediate supervisors. The public address system, in-plant radio and telephone will be used by supervisors to again advise personnel to evacuate. Instructions to use the alternate evacuation routes if necessary will be given.
- 4. As soon as practical, the highest ranking supervisor will prepare a list of all personnel at the Personnel Reporting Location. The guard will provide a list of all visitors.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment III

- 5. Upon completion of the employee list, the supervisor in charge will advise the Emergency Coordinator of the status of any personnel remaining in the plant. All other personnel will remain at the Personnel Reporting Location.
- 6. Contract personnel should also be listed with the name of their company. Contract foremen should report to the Contract Coordinator at the Personnel Reporting Location.
- 7. The names of fire brigade and/or other emergency team members involved in emergency response will be reported, in writing, to the Personnel Reporting Location by designated response team personnel.
- 8. A final tally of persons will be made by the Emergency Coordinator.
- 9. No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas.
- 10. A Supervisor at the Personnel Reporting Location will render First Aid to any personnel as necessary. A Plant Guard will call Emergency Medical Service (911) should additional medical attention be required.
- 11. Re-entry into the plant area will be made only after clearance is given by the Emergency Coordinator. At his direction, a signal or other notification will be given for re-entry into the plant.
- 12. With regard to personnel accountability, immediate supervisors will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are visiting. Contractors are the responsibility of the Contract Coordinator. Truck drivers are the responsibility of the area supervisor where the truck is loading/unloading. The guards will aid in accounting for visitors, contractors, and truckers by reference to the signin sheets.

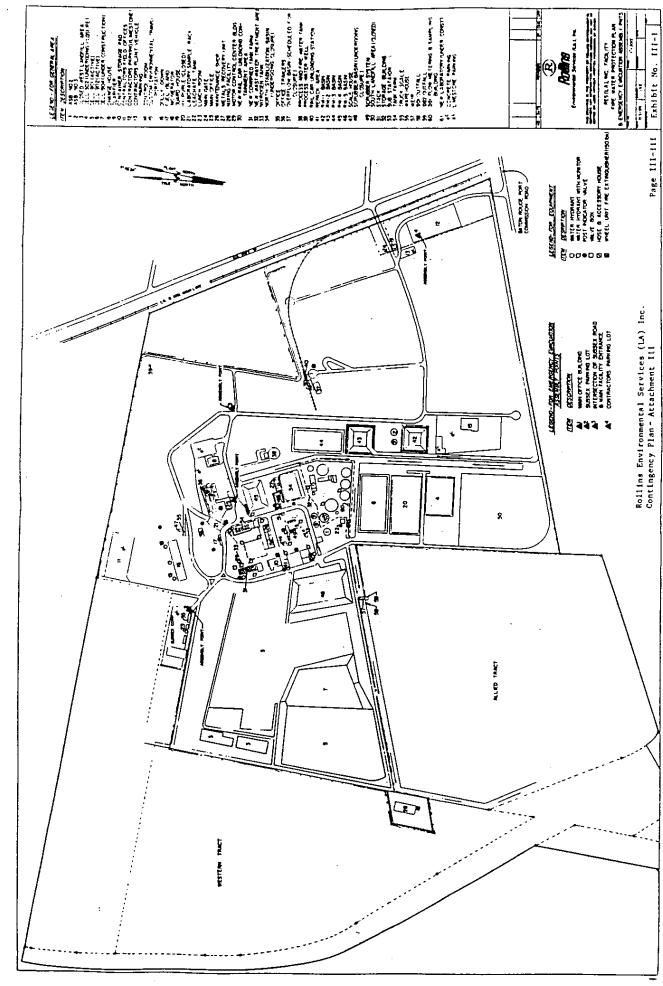


EXHIBIT H-4
FIRE RESPONSE PROCEDURES

# ATTACHMENT IV

# FIRE RESPONSE PROCEDURES

I.	Introduction		i	
II. Fire		Fire Response		
	A.	Fire Response During the Day	i	
	В.	Fire Response at Night or on the Weekends	ii	
	C.	Fire Brigade Personnel	ii	
	D.	List of Fire Monitors/Hydrant Locations	iv	
	E.	List of Fire Extinguishers and Locations	v	
III.	Fresh	Water and Fire Protection System,		
		lard Practice Instructions #001-09	vii	
	I.	Introduction	vii	
	II.	Safety	viii	
	III.	Procedures	viii	
	•	Fire Pump Checklist	xii	
		Fire Monitor Detail	xiii	
		Pump Systems	xiv	
		Water Supply Systems	xv	
Exhil	oits			
	ΓV-1	Fire Water Protection Plan Diagram (Facility)		
	ΓV-2	Fire Water Protection Plan Diagram (Process Area)		

## I. Introduction

Rollins Environmental Services (LA) Inc. maintains a fire-water loop, in-plant fire monitors, hose houses and fire extinguishers throughout the plant. The fire monitors, water hydrants, wheel unit fire extinguishers and hose houses are shown on Exhibits IV-I and IV-2 at the end of this attachment. Their locations are described on page iv of this attachment. The location of all fire extinguishers are listed on pages v and vi of this section. A deluge system is in place for the incinerator belt system. Fire Brigade personnel are trained and available on all shifts to respond to a fire. Standard Practice Instructions, SPI #:001-09, dated June 8, 1988, describes the "Fresh Water and Fire Protection System" and its operation in detail. This SPI is included as part of this section beginning on page vii.

# II. Fire Response

## A. Fire Response During the Day

A fire will be reported upon discovery to the EMERGENCY COORDINATOR or the Operations and Maintenance Manager by radio or telephone. The EMERGENCY COORDINATOR or Operations and Maintenance Manager will use the radio to notify all supervision including the Fire Brigade Chief and the Protection Chief.

- 1. The Fire Brigade Chief and the Protection Chief will proceed immediately to the scene of the fire.
- 2. Based on the initial reports and assessment, the Fire Chief will use the radio or public address system to direct the Fire Brigade to the scene of the fire.
- 3. The Fire Brigade will report to the fire location in a quick and safe manner.
- 4. If necessary, the Fire Brigade Chief will order the activation of the fire truck.
- 5. The Fire Brigade Chief will assess the fire conditions and direct the Fire Brigade in extinguishing the fire\*.
- 6. The Fire Brigade Chief will determine when and if outside fire response assistance needs to be called. If outside assistance is required, the following agencies may be contacted:

Baker Fire Department	775-3711
Brownsfield Volunteer Fire Department	383-4425
Scotlandville Fire Department	383-4425

Additional emergency response assistance may be obtained by contacting agencies or personnel listed in Attachment IX, Emergency Communication and Call List in this Contingency Plan.

\* All fires will be fought by the Rollins Environmental Services (LA) Inc. Fire Brigade until extinguished, or it exceeds the Brigade's ability to safely or effectively continue. This decision will be made by the Fire Brigade Chief or Protection Manager.

# B. Fire Response at Night or on the Weekends

The fire will be reported to the On-shift Supervisor who is serving as the EMERGENCY COORDINATOR.

- 1. The On-shift Supervisor will proceed to the location of the fire.
- 2. The On-shift Supervisor will notify the Fire Brigade to proceed to the locations of the fire.
- 3. The On-shift Supervisor will instruct the Guards to notify the Fire Chief (pager) and the Protection Chief (pager) and the Plant Manager and Operations and Maintenance Manager as soon as possible.
- 4. The On-shift Supervisor will assess the fire conditions and direct the Fire Brigade in extinguishing the fire.
- 5. The On-shift Supervisor will determine when and if outside fire assistance needs to be called. If outside assistance is required, the following agencies may be contacted:

Baker Fire Department	775-3711
Brownsfield Volunteer Fire Department	383-4425
Scotlandville Fire Department	383-4425

Additional emergency response assistance may be obtained by contacting agencies or personnel listed in Attachment IX, Emergency Communication and Call List in this Contingency Plan.

# C. Fire Brigade Personnel

- 1. A list of fire brigade personnel is included on page iii of this section.
- 2. Fire Brigade Chief is as listed or designated by emergency coordinator.

# FIRE BRIGADE PERSONNEL

The following Rollins Environmental Services (LA) Inc. personnel are members of the Fire Brigade. (Teams will be determined and posted according to shift scheduling.)

Jeff Pittman - Fire Chief
"Skipper" Bourg - Safety Manager
Jay Lockwood
Paul Kimble
Mike Brunson
Glen Bordelon
Jack Boone
Ray Morris
Barry Lambert
Greg Spillman
Wes Dunaway
Dru Muse
R. P. Holley
Jim Cavanaugh

D. Fire Monitor locations and fire water hydrant locations are shown below. They are graphically located on Exhibit IV-1 at the end of this attachment.

## FIRE MONITOR/HYDRANT LOCATIONS

- 1. Southeast corner of Kiln Storage Pad
- 2. West of Staging Pad I (hydrant)
- 3. West of Kiln Feed
- 4. Northeast of Incinerator Boiler
- 5. Northeast of Direct Burn Pad at Incinerator Area
- 6. West Corner of Rainwater Basin #4
- 7. North of Maintenance Shop
- 8. Near Nitrogen Tank of Former Tank Farm
- 9. Southwest of Former Tank Farm
- 10. Southwest of Tank Farm
- 11. Southwest of Tank Farm
- 12. Northeast of Tank Farm
- 13. Northeast of Tank Farm
- 14. West Corner of Dolly Down Pad
- 15. North Corner of Dolly Down Pad
- 16. Southeast of Former Tank Farm
- 17. North of Waste Water Treatment Cooling Tower
- 18. South of Sand Filters
- 19. East of PACT Filters
- 20. Southwest of Inorganic Filter Press

E. Fire extinguishers are located throughout the plant. All personnel are trained in their proper use.

# FIRE EXTINGUISHERS

	Location	<u>Type</u>
1.	Main Office Lobby Conference Room	2 1/2# H <sub>2</sub> 0
2.	Loddby Pump Pad	20# ABC
3.	Tank Farm - North	20# ABC
4.	Tank Farm - North	150# ABC
<b>5</b> .	Tank Farm - South	20# ABC
6.	Maintenance Shop	20# ABC
7.	Under Kiln Belt	ABC System
8.	Loddby Burner	20# ABC
9.	Scrubber Pumps	20# ABC
10.	Fork Truck	2 1/2# ABC
11.	Ford Truck	2 1/2# ABC
12.	Control Room	16# Co <sub>2</sub>
13.	Laboratory	20# Co <sub>2</sub>
14.	Laboratory	2 1/2# ABC
15.	Fire Truck	20# ABC
16.	Fire Truck	20# ABC
17.	Mix Pit - North	150# ABC
18.	Mix Pit - South	150# ABC
19.	Rail Car Unloading	150# ABC
20.	Trailer Offices	20# ABC
	-	Sales (2) 2 1/2# ABC
	•	Accounting (1) 2 1/2# ABC
	-	Construction (2) 2 1/2# ABC
	-	Lab (1) 2 1/2# ABC
	-	Safety (1) 2 1/2# ABC
	•	Engineering (1) 2 1/2# ABC
21.	West wall of Repack Facility (2)	20# ABC
22.	East of Repack Facility	20# ABC
23	North of Afterburner	20# ABC
24.	North End of Scrubber	20# ABC
25.	Monitor Control Center No. 1	ABC, CO <sub>2</sub>
26.	Power Building No. 1 (3)	20# ABC
27.	IWTS Polymer Storage Building	20# ABC
<b>28</b> .	Cooling Tower Pump Containment	20# ABC
29.	Reactor Clarifier Pump Tank	20# ABC
30.	001 Outfall Building (2)	20# ABC
31.	OWTS Backwash Tank	20# ABC

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment IV

32.	OWTS Pact Blower Pad	20# ABC
33.	OWTS Sand Filters	20# ABC
34.	OWTS CMU Building	20# ABC
<i>35</i> .	East of Main Drum Storage Pad V	20# ABC
36.	East of Drum Storage Pad VI	20# ABC
37.	East of Repack Facility VIII	20# ABC
38.	Southeast of Kiln Storage Pad III - (2)	150# ABC, 20# ABC
39.	Rear of Repack Facility VIII - (3)	20# ABC
40.	Behind Warehouse	20# ABC
41.	MRU, near T-2202	20# ABC
42.	Security Truck - (4)	20# ABC

#### STANDARD PRACTICE INSTRUCTIONS

Fresh Water and Fire TITLE:

SPI#:

001-09

Protection System

REV#:

AUTHOR:

R. Ellisor

DATE:

June 8. 1988

# I. Introduction

RES (LA) Inc. has two (2) deep water wells;

- The #1 deepwell is located east of #1 IWS unit and is a back-up fresh water supply system. In a power outage this pump can be started in the control room if needed. The pump motor is tied into the emergency diesel generator system.
- The #2 deepwell is located east of the hourly change house, next to our property fence line. This deepwell is the primary supplier of fresh water at RES (LA). Used to maintain the level in tank T-08020, between 85% to 95%.
- C. The fresh water supply Tank T-08020 is located east of the MRU. Tank is 32 feet high but the overflow is at 28 1/2 feet (941,800 gallons). The top 30% is dedicated for;
  - IWS Plate Water
  - 2. Cooling Towers Make-up Water
  - 3. Safety Showers
  - 4. All Fresh Water Drops
  - · 5. Water Used in Mix Barn
    - Pump Seal Water Plant Wide 6.
    - Back-up Quench Water

The remaining 70% of supply tank T-08020 is for plant wide fire protection.

Operations Manager

DATE: 6/13/88

Safety Manager

DATE: 6-20-58

Technical Manger

DATE: 6-9-58

Plant Manager

DATE: 6/21/88

D. The fire water protection system was turned over to operations March 22, 1988. A Cummins diesel engine powers the Patterson pump, that is rated at 2000 GPM at 150 PSI. The 16" suction line comes from the supply tank, T-08020. When the fire pump is set in an automatic mode, it will respond whenever any of the fire monitor valves are opened. The fire pump will also respond whenever the quench water flow drops below 180 GPM or if the pressure drops below 58 PSI in this line.

## II. Safety:

Each Monday during the Incinerator Failsafe Testing, the diesel fire pump will be started to insure its in good running condition and that it will respond upon demand.

Maintenance will "PM" at the same time. The fire pump checklist will be filled out and sent to the Maintenance and Operations Managers. The Operations Secretary will file one copy and forward a copy to the Safety Manager. See Attachment "A"

## III. <u>Frocedures:</u>

- A. Deep Water Well Systems #1 Well;
  - The #1 deepwell is located east of #1 IWS unit.
  - This deepwell can be started from the control room when needed.
  - The pump motor is tied into the plant emergency diesel generator system.
  - Is a back-up fresh water supply system.
  - A check valve on the discharge line of the pump prevents water from flowing down the well.
  - 6. Each week to prevent sanding and to ensure the pump is in good running condition, the pump needs to be ran for one (1) hour.
- B. The number #2 deepwell;
  - The primary function of this pump is to maintain an 85% to 95% level of fresh water supply tank T-08020.

SFI#: 001-09

## Page 3

- 2. A selector switch located in the pump house, motor control room, give the operator the option of running the pump in automatic or manual mode. In automatic the pump should start whenever the level drops below 85% and should shut off when the tank (T-08020) reaches the 95% level.
- 3. The #2 deepwell will deliver B00-1200 GFM to the storage tank.
- 4. If for some unknown reason the level drops below T-08020 an alarm will sound in the control B0% in If this should occur the WTO should room. immediately be informed and go to the fresh water supply systems pump house and manually start the #2 deepwell if not running. (At a fresh water usage rate of 250 GPM, 10% of tank T-08020 represents 6 1/2 hours before the feed pump shuts Should check too see if the fire down at 70%.) If running find out why and pump is running. correct.
- 5. A two inch line from the 16" fire pump intake line returns to the #2 deepwell for cooling. This valve must always be open.
- 6. Whenever the level drops below 70% the fresh water supply pump will shut off and will not restart until the level rises above 70%. If this should occur, the I.D. should start the #1 deepwell pump.

## C. Fire Protection System; See Attachment "C"

- The bottom 70% of the fresh water supply tank (T-OBO20) is dedicated to RES (LA) fire protection system.
- A Cummins diesel engine powers the Patterson pump, rated at 2000 GPM at 150 PSI.
- A Jockey pump, low volume high pressure (165 PSI) maintains fire water line pressure.
- The fire pump will start automatically whenever;
  - a. The quench water pressure drops below 58 PSI.
  - b. If the quench water flow drops below 180 GPM.
  - c. Opening of any fire monitor valves.



- The fire pump control panel is located in the pump house with a display in the Operations Control Room.
  - a. Power ON
  - b. STOP
  - c. RUNNING
  - d. System Failure
  - e. Battery Failure
- 6. Testing has shown the fire pump will deliver 375 GPM at 70 PSI to the quench water header and will also supply water to the first row of the secondary quench sprays, first row only. Valve is set and locked, when opened greater than setting, the pressure at the quench header is too close to the 58 PSI trip point.
- 7. If the fire pump starts it must be manually shut off. The following must be satisfied prior to shutting the pump off or it will re-start.
  - a. Reset trip valve located where the fire water line ties into the quench header, north side of the afterburner.
  - b. Fybroc pump must be running and quench water line pressure must be above 58 PSI. Flow must be above 180 GPM. Check pressure drop across quench water basket strainers. If there is more than 10 PSI drop switch strainers and clean plugged strainer.
  - c. When all the above is satisfied the fire pump can be shut off by pressing the <u>STOP</u> button located on the control panel in the pump house. All WTO's are trained on this procedure.
- 8. By opening the valve on any fire monitor will automatically start the fire pump. Some of the fire monitors are attached to a fire hydrant. Because of hose connections these valves are kept closed. To open turn the handle on top of the hydrant counter clockwise. NOTE: The valve must be in the open or closed position only. Anything in between could cause the hydrant couples to blow apart. See Attachment "B"

- D. Fresh Water Supply Pump System;
  - 1. The two fresh water pumps are located in the pump house with a third to be installed at a later date. The pumps are rated at 500 GPM at 110 PSI. A return line going back into the supply tank from the pump discharge line has a in-line pressure control valve that is set at 100 PSI. NOTE: The piston that opens and closes this valve has a reverse action, compared to other pressure control valves used at RES (LA) Inc. When the piston is in all the way the valve is open an all the way out the valve is closed.

The controller has been programmed so the valve indicator is as follows. At 100% the pressure control valve is wide open and at 0% the valve is closed.

- 2. When the #1 deep well is in service the pressure control valve should be placed in manual and valve should be closed, valve indicator on controller should be on "O". NOTE: The pressure control valve is air to close, loss of plant the valve will open. But if portable air compressor comes on, this should be enough air (20 PSI) to operate this valve.
- 3. Both pumps have check valves on the discharge side this will prevent back feeding whenever the #1 deepwell is in service. The #1 deepwell also has a check valve on the discharge side of the pump, to prevent back feeding back into tank T-08020.
- 4. The two supply pumps supply the unit with fresh water, operations of pumps is as follows;
  - a. Pump "A" or "B" can be selected as the lead pump with the other to be used as the lag pump, on stand by. If the pressure drops below 50 PSI the lag pump will automatically start and will continue to run until manually shut off.
  - b. If the level in tank T-08020 drops below 70% the supply pump will shut off and they will re-start automatically whenever the 70% level is regained.

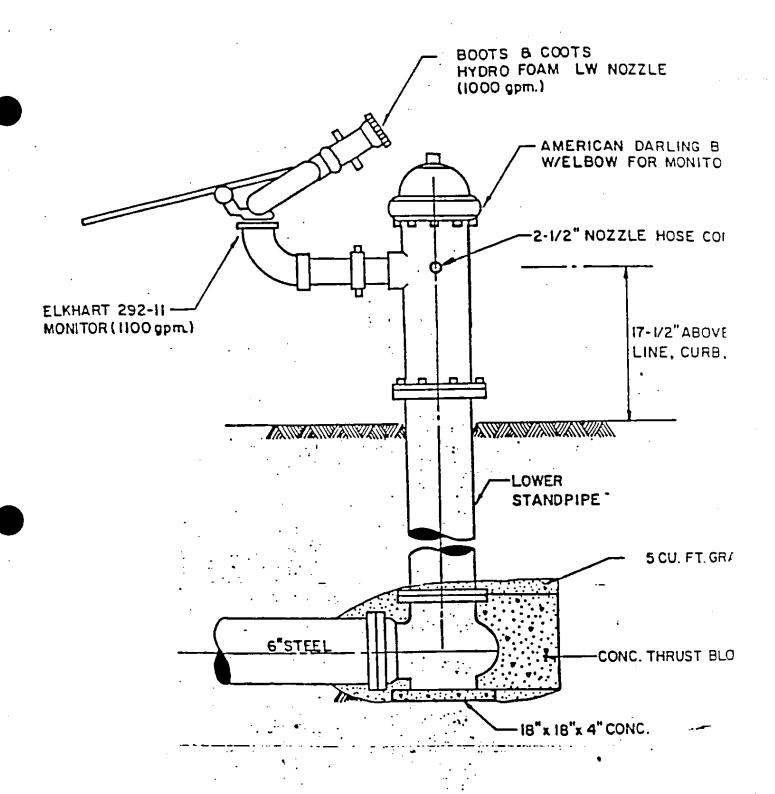
    See Attachments "D" & "E"

# FIRE PUMP CHECKLIST

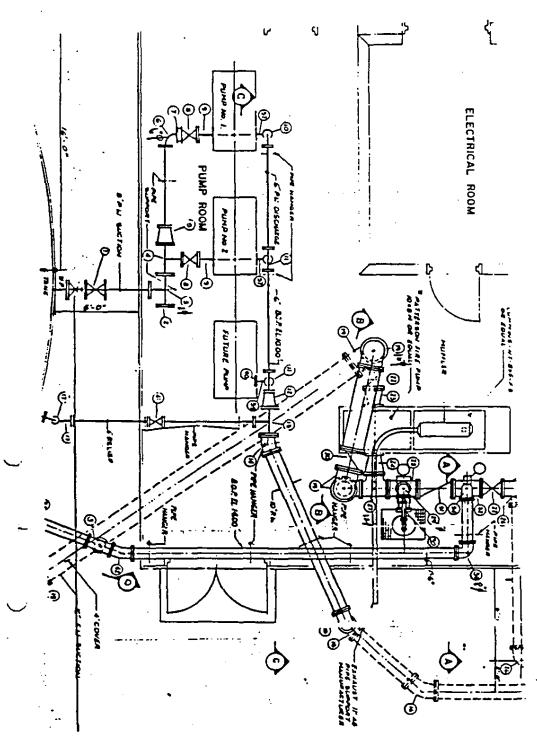
ate	•	Time:		_ INSPECTED BY:	
RE-	START CHECK:				
•	Fuel Tank Level				
	(Refill if 3/4 or less	)			
		Yes No			Yes · No
	Fuel Tank Discharge	163 110	15.	Coolant level O.K.	
	Valve Open	<del></del>		(Refill 50/50 H <sub>2</sub> 0-	Antifreeze)
	Pump House Doors		16.	#1 Battery Set	<u>-</u>
	closed	<del></del>		charging light on	
	Ceiling lights on		17.	#2 Battery set	
				charging light on	
-	Room Clean		18.	#1 Battery set,	<b>A</b> MPS
				rate of charging	
•	Heater working		19.	#2 Batter set,	AMPS
	(Winter only)			rate of charging	
•	Emergency light	<del></del>	20.	Batteries, Posts	
	charged		•	clean (clean if ne	
	Jockey Pump suction		21.	-	
	Valve open			(Specific Gravity) #1 North	#2 South
•	Jockey Pump Discharge Valve Open	<del></del>		VI ROTU	¥2 300CH
n	Fire Pump Main-			N-	N-
	Discharge Valve Open	<del></del>		c-	
11.	Prime water tank			s-	s-
	fill valve open	<del></del>			
12.	Jockey Pump Breaker			Set #2 (large)	
	energized			#2 North	#2 South
13.	Controller in				
	"Auto" position			N-	N
14.	Cooling water			C	C
	supply valve open			S	s
FIR	E PUMP START			•	
C	-1.4 m.	· _			
LTA	nking Time	Sec.		Engine R.P.M.'s	
FIR	E PUMP ENGINE/PUMP CHE	CK (AFTER RUNNIN	G 10	MINUTES)	
1.	Engine lubricating oi	l pressure		PSI	
2.	Engine coolant temper	ature		Degrees	F
3.	rite main, discharge	line pressure		PSI	
4.	Pump packing leaking	<del></del>		— <del>-</del>	
	Inboard YES	OM			
5	Outboard YES	ОМ		_ <del>_</del>	
5.	Pump bearings lubrica	ted YES	_ NO	<del></del>	
FIR	E PUMP SHUTDOWN				
1.	Controller in "Auto"				

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment IV

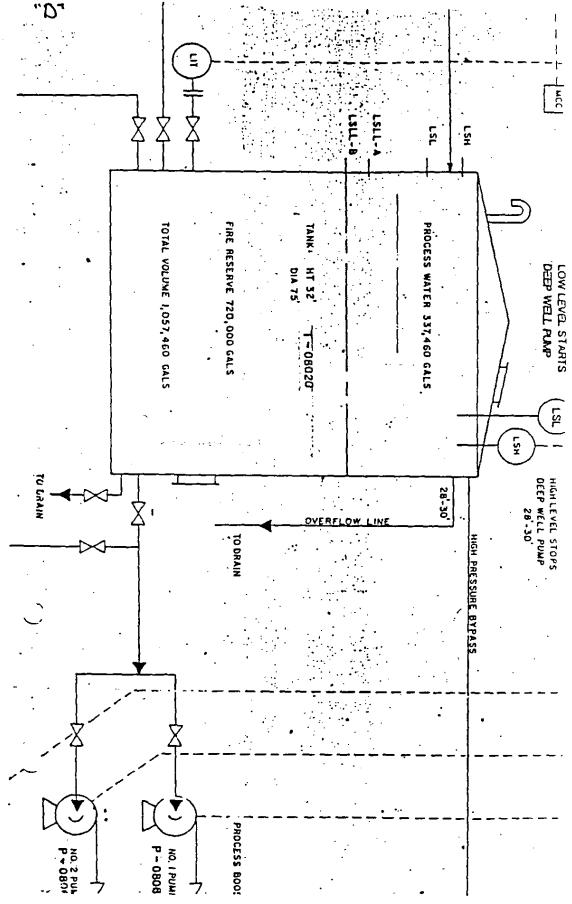
August, 1989



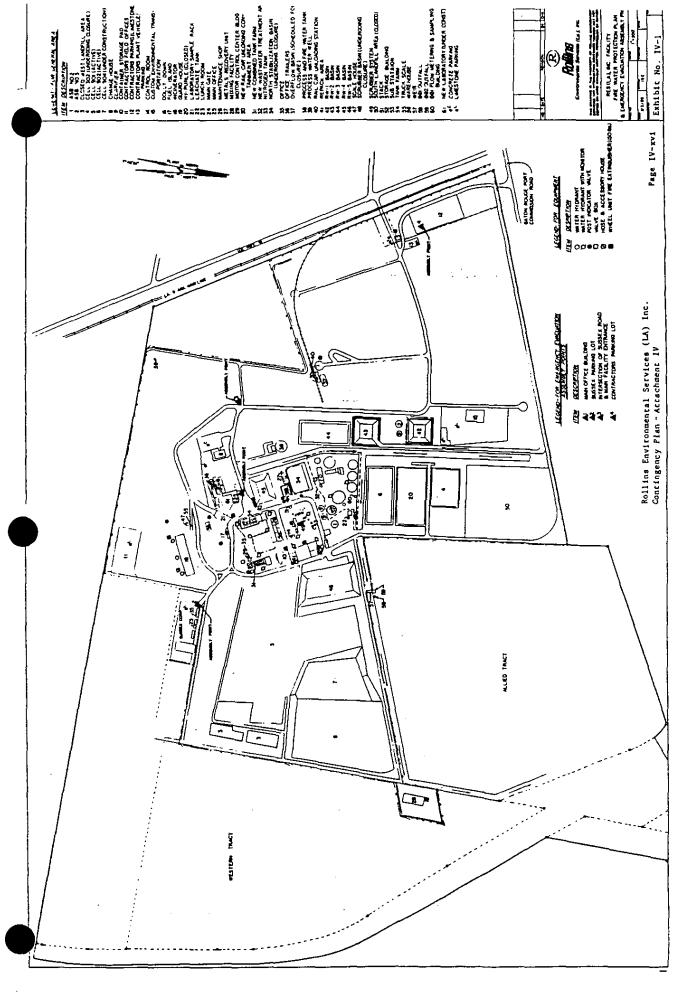
# FIRE MONITOR DETAIL

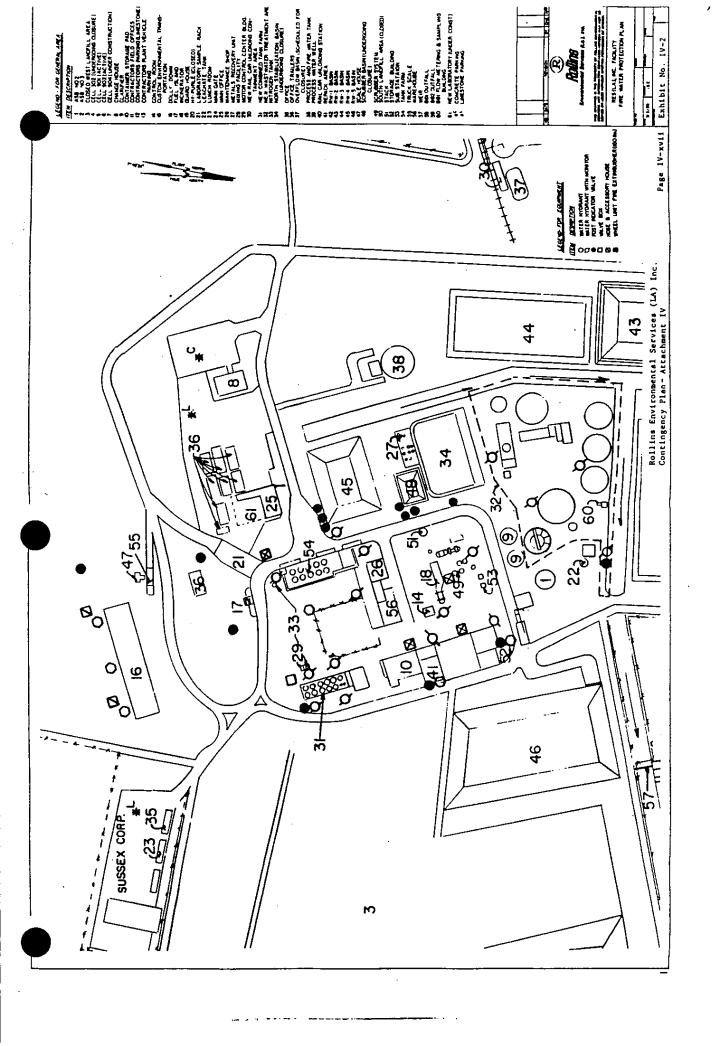


Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment IV



Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment IV





# CERTIFICATION

I ha	ave i	evie	wed	this	SPCC	Plan	and	havin	ig exar	nined	the	facilit	y and	being	familiar <sup>•</sup>	with
															performed	d in
acc	orda	nce	with	good	d engir	ieerin	g pr	actice	s in a	ccorda	ince	with t	he re	gulatio	ons.	

Name/Title		
Louisiana P.E. Registration Number		

EXHIBIT H-5
SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN (SPCC)

# ATTACHMENT V ROLLINS ENVIRONMENTAL SERVICES (LA) INC. BATON ROUGE PLANT

# SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN

SEPTEMBER 26, 1980
REVISED JUNE 23, 1981
REVISED MAY 3, 1982
REVISED JUNE 6, 1984
REVISED DECEMBER 11, 1986
REVISED APRIL 20, 1987
REVISED MAY 16, 1989
REVISED AUGUST 1, 1989

# SPILL PREVENTION AND COUNTERMEASURES PLAN (SPCC)

# TABLE OF CONTENTS

SPIL	L PREVENTION AND CONTROL	iii
1.	Waste Transfer Procedures	iii
2.	Inspection and Maintenance	iii
3.	Employee Training	iv
4.	Security	iv
SPIL	L CONTROL	iv
1.	Storage Facilities	iv
2.	Transfer Facilities	v
3.	Outfall Control	v
4.	CET Truck Washing Facility	vi
FAC	ILITIES DESCRIPTION	vi
1.	Incinerator	vi
2.	Tank Farm	vi
3.	Direct Burn Systems	vii
4.	Diesel and Gasoline Fuel Oil Tanks	viii
5.	Drum Storage and Processing Area	viii
6.	Bulk Storage	ix
7.	Leachate Tank	ix
8.	East Quadrant Area	ix
9.	Mixing Facility	ix
10.	Retention Basins, RW-1, RW-2, RW-3, RW-4,	•
	and RW-5 (Rainwater)	ix
11.	Railroad Tank Car Unloading	x
12.	Tank Truck Unloading	x
13.	Truck Parking (Dolly Down) Area	xi
14.	Inorganics Wastewater Treatment System	xi
15.	Metals Removal Unit	xi
16.	Organics Wastewater Treatment System	xii
PRO	CEDURES IN THE EVENT OF A HAZARDOUS WASTE	
OR (	DIL SPILL	xii
GEN	ERAL RESPONSE FOR SPILL CONTAINMENT	xiii
1.	Liquid Spills	xiii
2.	Solid Material Spills	xiii
Rolli	ns Environmental Services (LA) Inc.	
	ingency Plan - Attachment V	August, 1989

SPILL	CONTAINMENT AND CLEANUP EQUIPMENT	xiv
SPILL	CLEANUP PROCEDURES BY AREA	xiv
1.	Incinerator Tank Farm	xiv
2.	Basin Area (South-West) Quadrant of the Site	
	and the Entrance Roadway	xiv
3.	Basin Area (North-East) Quadrant of the Site	
	and the Entrance Roadway	xv
4.	Basin Area (East) Quadrant of the Site	XV
5. ·	Basin Area (North-West) Quadrant of the Site	χv
6.	Waste in Plant Effluent Resulting from Any Area - Final Containment	xv
7.	Leachate Collection Transfer Lines, Groundwater Recovery Lines	
	and Yard Piping	xv
Exhibit	s .	
	V-1 Detail of Site Plan for Process Area	xvi
	V-2 Site Plan	xvii
	V-3 Facility Drainage	xviii
	Emergency Organization Staffing	xix
	Emergency Contact List	xx
	Tank Inspection Report	xxi
	Daily Incinerator Inspection	xxiv
	Tank Field Inspection and Report	xxv
	Pump and Lubrication Checklist - Operations Helper	xxvi
	Pump and Lubrication Checklist - Operations - Treatment Operator	xxvi

# SPILL PREVENTION AND CONTROL

Spill prevention and control is incorporated into all phases of the Rollins Environmental Services, Louisiana, RES (LA) facility operations. Apart from the conscientious engineering design of the plant which accommodates the practical aspects of spill prevention and control, RES(LA) uses a system of proper waste handling, contingency planning, and employee training to minimize the opportunity for oil or hazardous waste spillage. Additionally, a comprehensive inspection and maintenance program for all waste processing, storage and transfer equipment is practiced at the facility to ensure proper functioning of all equipment contacting wastes. The spill prevention techniques used in conjunction with hazardous waste storage and treatment in tanks is provided in this section along with a discussion of the response activities which will be initiated when containing tank spills or leakage. The RES (LA) facility has no history of significant oil or chemical spills which were released uncontained into the environment. This SPCC Plan is regularly reviewed and amended to reflect current operating activities and administrative procedures.

#### SPILL PREVENTION

### 1. Waste Transfer Procedures

Procedures for transferring liquid wastes or waste slurries from transport trucks to tankage and from tankage to other portions of the facility have been established to minimize the number and intensity of spill events. All transfer procedures from truck or rail tanks are accomplished according to DOT regulations. Truck unloading occurs in designated areas. In the event of a spill, the unloading pads are constructed of concrete, curbed to contain spillage and sloped to promote drainage to a sump. Wastes are pumped through sealed chemically resistant tubing from the trucks into the appropriate tank for storage or treatment. Transport trucks are attended at all times during unloading. Each truck must be "grounded" before unloading to storage tank can begin. Each tank is gauged daily as well as before and after receiving a waste load. Transfer of wastes from tankage to other portions of the facility is through the use of sealed chemically resistant piping and pumps or vacuum trucks.

### 2. Inspection and Maintenance

Waste transfer pumps, piping and instrumentation are regularly inspected along with the tanks and associated controls. The equipment is inspected for signs of wear and/or malfunction and is repaired as necessary. The inspection and maintenance program has been established to ensure safe and efficient operation of tankage and all associated waste transfer equipment in accordance with applicable regulations, but this program is also effective in minimizing leaks and spills. Forms are used to document the regular inspection of the equipment and are maintained by the maintenance and operations departments. Examples of these report forms are found at the end of the SPCC Plan.

# 3. Employee Training

All operations and maintenance employees are subjected to an indoctrination and training program to equip them to handle hazardous materials. The training includes, but is not limited to, a complete review of the safety and operating procedures for the plant in general and their area of assignment in particular. They are placed under the tutelage of a qualified employee and receive "hands on" training for up to four weeks, at the end of which they are subject to oral, written and demonstration testing by a member of management. Their areas of weakness are reviewed with them and additional training is given as appropriate. The tests include requirements for knowledge and familiarity with spill containment and fire fighting procedures.

Standard Practice Instructions (SPIs) have been prepared for routine and critical operations at the facility. The SPIs are designed to reduce the potential for accidents resulting in spills or other environmental incidents. All employees are familiar with the SPIs for their particular areas of responsibilities.

# 4. Security

The RES (LA) facility is fully fenced and the entrance gate locked and manned by guards on a 24-hour basis.

Facility lighting is sufficient to allow discovery of personnel occurring during hours of darkness, both by operating personnel if present and by non-operating personnel. Lighting is maintained at an adequate level to allow prevention of spills occurring through acts of vandalism.

# SPILL CONTROL

### 1. Storage Facilities

Spills in oil storage or hazardous waste storage areas are contained within perimeter diking systems constructed of concrete floors and retaining walls. The tank areas have a concrete containment system. The diking and sump systems are capable of containing the complete loss of the largest tank plus the rainfall from the 24-hour, 25-year storm event. Liquids contained in the diked areas are pumped to wastewater collection tanks which are part of the organic wastewater treatment system. Leaks and spills in the incinerator tank farm area are sent directly to the tank farm thermal oxidation tanks.

If a tank has been identified as leaking, the tank will be taken out of service as soon as the leak is detected. The tank will first be drained of all free liquids with the liquid being sent to the incinerator. Once all liquids have been removed, the tank will be inspected for residual sludge. Any sludge remaining will be removed from the tank by vacuum equipment or by entering the tank and manually removing the contents. Depending on the waste characteristics, these sludges will be incinerated or solidified and landfilled.

The tank exterior will then be thoroughly inspected to identify the cause of the leak and to determine the repairs necessary to place the tank back in service. Depending on the results of the inspection and maintenance evaluation, the tank interior may be decontaminated using a suitable solvent and a water flush prior to performing repairs. Any spent solvent and wash water residues will either be sent to the wastewater treatment system or the incinerator for treatment. The tank will then either be repaired, tested and placed back in service or permanently taken out of service and possibly replaced.

If in the highly unlikely event that a non-contained spill occurs in a tank area, it will be contained by placing absorbent over the spill. The spent absorbent will then be removed from the area either manually or with a front end loader and either incinerated or placed in the RES(LA) landfill. If the spill is large enough to flow along the controlled drainage pathways existing at the plant, the valved gate at the entrance to RW-4 will immediately be opened to divert as much of the waste flow as possible from the 002 drainage channel and into the rainwater basin (RW-4). A vacuum truck will be used to recover the spilled material.

# 2. Transfer Facilities

Any wastes spilled on the concrete unloading pad during unloading operations will be contained by the perimeter curbing around the pad and will gravity drain to the secondary containment system. Once most of the spill has drained from the pad, the remaining liquid will be swept toward the sump with a wiper, and the pad will be hosed with water. Material in the sump will the be pumped to the wastewater treatment system for treatment. In the unlikely event the spill overflows the perimeter curbing, the waste will be contained by placing absorbent over the spill. The spent absorbent will then be removed from the area manually or with a front end loader and incinerated. If the spill occurs as a result of a leaking component of the transfer system, the transfer pumps will be shut off immediately following leak detection. The transfer equipment will be inspected and the leak will be repaired before resuming transfer operations. During unloading operations, personnel monitoring the material transfer and always within the immediate vicinity of the truck or rail car.

Approximately 98% of the waste received by Rollins arrives by truck and 2% by rail car. These figures may vary somewhat occasionally. Rail cars are unloaded to trucks for transport to the incinerator tank farm.

#### 3. Outfall Control

If any material escapes from this point, the 002 dam facility will be in operation to prevent uncontrolled discharge of wastewater. The 002 dam facility is constructed with a non-valved overflow dam. A knife gate in the dam (which is normally closed) will be positioned to allow below-surface water to flow past the dam while retaining the floating liquids. A pump at the 002 dam will be operated to maintain the water level in the drainage channel below the overflow level. The 002 waters will be pumped to the wastewater treatment system.

A vacuum truck is available to back up this pumping system if necessary. All waste liquids contained by the 002 dam facility will be recovered with a vacuum truck.

A final containment technique, which may be used if spilled waste material escapes the 002 dam facility, will be the construction of a temporary dam in the 002 drainage channel downstream of the advancing waste front. The dam will be constructed of clean soils and will be used to completely block discharges from outfall 002. Once the dam is in place, the waste will be recovered with a vacuum truck.

# 4. CET Truck Washing Facility

The CET facility on the Rollins facility maintains its own SPCC Plan. However, since washwater from the truck washing operation is pumped and trucked to Rollins for treatment. The usual method of treatment is thermal oxidation. Four tanks, TK-8081, 8082, 8083, and 8084 store washwater from the operation prior to being sent to Rollins for treatment and discharge. Each of the tanks has a capacity of 6000 gallons. The tanks are located in a concrete containment area with a capacity of 12,000 gallons. The facility is enclosed so precipitation will not affect the containment area. In the event of a spill, the contained washwater would be pumped and trucked to Rollins for incineration. Empty bins are stored in a concrete floored and diked area prior to washing. Runoff from this area is collected in a sump and piped to Rollins.

# **FACILITIES DESCRIPTION**

Refer to Exhibits V-1, V-2 and V-3 for site plans and facility drainage.

# 1. Incinerator

Liquid, sludge, and solids wastes are incinerated. It consists of a common afterburner, a liquid combustion chamber (loddby), a rotary kiln, and a gas scrubbing system. The entire incinerator processing area is curbed to contain any leaks or spills, with appropriate trenches, sumps, and pumps to collect any leaks, spills, or rainwater that falls in the incinerator processing area and direct it to the appropriate treatment as determined by analysis.

### 2. Tank Farm

Waste oil and other flammable/combustible streams are stored in the tank farm for feed to the incinerator. The tank farm area is diked with concrete retaining walls and floor. All pumps for unloading to and from the tanks and to the incinerator are within the diked area.

Each tank level is monitored continuously. A high level instrument in each tank is interlocked with the unloading pump and corresponding valve designed to stop the pump and close the valve when the high level is reached; these measures are to guard against over-filling.

The three truck unloading pads are curbed and sloped so that any spill will drain to the tank farm sump. An uncontained spill in this area is extremely unlikely. A maintenance schedule is followed on the tanks, pumps and piping, and proper unloading procedures are adhered to. Only one tank truck is unloaded at a time, so a spill during transfer operations can only involve the contents of one tank truck.

The incinerator tank farm system includes the following components:

Tank <u>Description</u>	Identification <u>Code</u>	Capacity ( <u>Gailons</u> )
Liquid Waste Storage	VE-4001	23,000
Liquid Waste Storage	VE-4002	23,000
Liquid Waste Storage	VE-4003	23,000
Liquid Waste Storage	VE-4004	23,000
Liquid Waste Storage	VE-4005	23,000
Liquid Waste Storage	VE-4006	23,000
Thermal-Oxidation Storage	VE-4009	20,000
Thermal-Oxidation Storage	VE-4010	20,000
Direct Burn Storage	VE-4014	6,000
Blend Storage	VE-4015	23,000
Blend Storage	VE-4016	23,000

All of the tanks are of steel construction. The six liquid waste storage tanks are used for normal receipt and storage of wastes that are compatible with the other wastes stored in the tank farm. Liquid wastes are mixed in one of the two blend storage tanks in order to achieve a desirable blend for efficient incineration. The two Thermal-Oxidation storage tanks are reserved for thermox materials to be sent to the incinerator afterburner. Wastes that are incompatible with each other are either isolated in the direct burn storage tank or sent directly to the incinerator from the shipper container. The Incinerator Tank Farm is located on a concrete pad with adequate curbing and diking to contain the contents of the largest tank plus precipitation in the event of a catastrophic tank failure. A major spill would be contained in a sump and removed for incineration. Small drips or spills and rain water are collected in the sump and sent to the wastewater treatment system.

### 3. <u>Direct Burn Systems</u>

Liquid or sludge wastes to be incinerated directly from the shipping container are placed on one of three direct burn pads. One of these is in the tank farm area and feeds into the direct burn tank in the tank farm. Two are adjacent to the incinerator processing area. All three direct burn pads are constructed of concrete, curbed to contain any leaks or spills, and equipped with sumps and pumps to collect and return any leaks or spills to the appropriate treatment as indicated by analysis.

# 4. <u>Diesel and Gasoline Fuel Oil Tanks</u>

Three diesel oil and gasoline tanks fuel tanks (1-8000 gallon, 1-2000 gallon, and 1-1000 gallon) are buried and present no threat of oil spillage except during filling and refueling of vehicles. The tanks are operated according to the regulations. They are located near the Operations offices, between the truck sampling station and the tank farm. The tanks are coated steel and cathodically protected. A high-walled curb is provided around the tank fill ports to catch a spill due to overfilling or temperature disconnect. This would be emptied by a vacuum truck in the event of an overfill spill. The tanks are gauged immediately before and after filling and periodically during usage.

In addition to the underground storage tanks, RES (LA) operates a LPG tank located on one of the former tank farm's concrete, curbed and trench-drained truck unloading pads. The 5,000 gallon tank trailer contains "clean" diesel fuel for burning in the incinerator as required by the permit. Any spills from this tank will be contained by the curbing around the pad which gravity flows into the tank farm impoundment system.

# Drum Storage and Processing Area

Drums of waste oil, solvents, and other liquid and solid wastes are off-loaded at the unloading ramp for placement on the proper pad for processing, if necessary, prior to transportation for final disposal in the appropriate Rollins facility. The nine staging pads are identified below by name and principal use below. The location of the drum pad is shown on Exhibit V-1 included as part of the SPCC).

Staging Pad I	Container and Ash Bin Storage
Staging Pad II	Landfill and Mix Pit Drums Storage
Kiln Storage Pad III	Incinerator Drum Storage (Dry)
Kiln Storage Pad IV	Incinerator Drum Storage (Dry)
Main Pad V	Incinerator Drums

Pad VI Gulping" Operations - Vacuum of liquids to tanker truck to

incinerator tank farm direct burn pad

Pad VII Labpack chemist checks drums before drums transported to

disposal facility

Repack Facility Pad VIII Repackage of incinerable materials and shredder operation

Under Construction - To contain shredder for repack of kiln

burn solids

Each pad is constructed of concrete with a concrete curb. All pads drain to individual sumps which are emptied by a pump or vacuum trunk. Collected precipitation and small drips and spills are sent to the organic wastewater treatment system. Major spills would be contained with absorbent or vacuumed up and sent to the incinerator.

North Pad IX

# 6. Bulk Chemical Storage

Rollins stores a limited number of other chemicals on-site which are used primarily for wastewater treatment. These include:

<u>Material</u>	Volume (Gal)	Tank ID and Location
50% Sodium Hydroxide	49,800	T36, T37
30% Hydrochloric Acid	3,700	MRU, 001 Outfall
Ferric Chloride Feed Tank	330	IWTS

The sodium hydroxide and hydrochloric acid tanks are constructed of steel and are within concrete floored containment areas with concrete curbs and sumps.

# 7. <u>Leachate Tank</u>

Landfill leachate is collected in a 12,000 gallon FRP tank located just west of the organic wastewater treatment system backwash tank. This tank is fully diked by concrete. Any spills will be collected in the containment sump.

# 8. East Quadrant Area

Stormwater run-off from east quadrant area are diverted through ditches and culverts to rainwater retention basins RW-1 and RW-2. Thus, any possible contamination can be retained and treated.

# 9. Mixing Facility

Materials containing free liquids to be stabilized prior to landfill may contain small amounts of oil. The exterior area is diked and drains to a collection ditch that flows to RW-5 via RW-5 diversion valve. The interior is sloped to the mixing tanks. In the event of a major spill involving a liquid or material containing oil, the spill would be contained using absorbent and solidified in the mixing facility for final disposal in the landfill.

# 10. Retention Basins RW-1, RW-2, RW-3, RW-4, RW-5 (Rainwater)

a. RW-1 and RW-2 are fed by rainwater run-off from the closed landfarm plots. The water is then pumped through aboveground piping to the 002 Outfall Ditch or to the organic wastewater treatment system.

# 13. Truck Parking Area (Dolly Down)

The truck parking and staging are located to the north and northwest of the Main Office Buildings are constructed with a concrete floor, concrete berms and equipped by a sump. The area has a two truck capacity. Small spills, leaks and drips and rainwater would be vacuumed and transferred to the wastewater treatment system. Major spills would be contained with absorbent or vacuumed and sent to the incinerator.

# 14. Inorganics Wastewater Treatment System (IWTS)

The inorganics wastewater system treats contaminated water from the wet scrubber system used to clean the incinerator effluent gases. The incinerator's gas stream is cleaned by contacting it with (scrubberwater) plant water. The scrubber water cleans the effluent gas by removing 1) trace quantities of contaminated gases created by gas/chemical reactions and 2) charged agglomerated particles from the gas stream. Other sources to the IWTS include recycle from the outfall check tanks and IWTS containment areas.

The following tanks are part of IWTS:

Tank Description	Tank I.D.	(Gallons)
Rundown Tank	TK-5015	6,500
First Stage Neutralization Tank	TK-5502	20,000
Second Stage Neutralization Tank	TK-5503	20,000
Scrubber/Clarifier	TK-5504	670,000
Sludge Holding Tank	TK-5507	9,400
Sludge Holding Tank	TK-5507	9,400
Reactor/Clarifier	TK-5513	150,000
MRU Pump Tank	TX-5514	

A thorough description of the system can be found in the Inorganics Wastewater Treatment System Operations Manual. All tanks within the inorganic wastewater treatment system with the exception of the clarifiers are within a paved and diked area equipped with a sump. Material contained within the diked area or the sump (rain water, spills, drips) is pumped to the inorganic wastewater treatment system for treatment.

#### 15. Metals Removal Unit

The Metals Removal Unit succeeds the IWTS reactor clarifier, Tk-5513, and MRU pump tan, TK-5514. The following units and tank in the MRU facility areas follows:

MRU Sand Filters	V-2201 A/B/C
Resin Beds	V-2202 A/B/C
Activated Alumina Column	V-2203

Neutralization Tanks
Regeneration Tank
T-2202, 2203
T-2206
Backwash Tank

The entire MRU is curbed and diked. Collected spills and rainwater is sent to the proper method of disposal according to its characteristics.

# 16. Organics Wastewater Treatment System

The organics wastewater treatment system treats contaminated wastestreams generated within the facility. In general, these waste streams are generated from the following sources:

- Containment areas collecting drips, spills, etc., and stormwater.
- Active face landfill run-off from wet weather run-off collected in open landfill areas.
- Interceptor wells which remove contaminated groundwater.

The following tanks are part of the organics wastewater treatment system:

Tank I.D.	Tank Capacity (Gallons)
TK-5303	64,000
TK-5950	1,489,000
TK-5600	200,000
TK-5601	100,000
TK-5602	27,000
TK-5603	67,000
TK-5606	9,400
TK-5604A/B	100 gpm
TK-5605A/B	200 gpm
K-5310, 5311, 5312	800,000
	TK-5303 TK-5950 TK-5600 TK-5601 TK-5602 TK-5603 TK-5606 TK-5604A/B

A more thorough discussion of the system is found in the Organics Wastewater Treatment System Operations Manual.

# PROCEDURES IN THE EVENT OF A HAZARDOUS WASTE OR OIL SPILL

1. In the event of an oil or hazardous waste spill, supervision is to be notified immediately and if a non-contained spill occurs, the Plant Manager, etc. is to be notified by the Supervisor involved according to emergency procedure. The containment of an oil or hazardous waste spill is to take precedence over all other operating activities; operating units are to be shut down if necessary to obtain needed personnel and equipment for containment of a spill. All spills are to be reported to the Environmental Affairs Manager. The Rollins Environmental Services (LA) Emergency Staffing, Organization Staffing, and Emergency Contact List are included at the end of this SPCC Plan.

2. As detailed in 40 CFR Part 302, spills of material considered to be of reportable quantity vary from one pound to one thousand pounds, depending on the material involved. In order insure correct reporting when spills occur, all spills of any amount are reported to supervision and staff.

# 3. Notification of National Response Center and LA/DEQ

Should the quantity of any spillage meet the criteria of reportable quantity as detailed in 40 CFR Part 302 - Designation, Reportable Quantities, and Notification, the National Response Center and LA/DEQ will be notified as outlined in the regulations by the Rollins Environmental Services (LA) Plant Manager or Environmental Manager. They will be appraised of sampling results and actions proposed to control the situation. Their input will be sought in an effort to most effectively protect personnel, the environment and public interest.

National Response Center - (800) 424-8802 DEQ Hazardous Material Response Center - (504) 925-6595

Note: All notifications or reporting will be made by the Environmental Affairs Manager in accordance with RES (LA) Spill Reporting Procedures. A copy of the document detailing these procedures is available from the Environmental Affairs Manager.

# GENERAL RESPONSE FOR SPILL CONTAINMENT

# 1. <u>Liquid Spills</u>

First response to any spill will include eliminating the source and containing the spill as quickly as possible to minimize the quantity of a spill. In the unlikely event of an uncontained spill, it will be contained by placing absorbent over the spill. The spent absorbent will be removed manually or with a front-end loader and either incinerated or placed in the Rollins Environmental Services landfill. In the case of any uncontained liquid spills into plant sumps, ditches or basins, the spill area will be limited as much as possible by liquid flow control measures (i.e., valves or diking). The spill will be analyzed for content - namely organics and pH altering materials, or the contents will be determined using the Waste Data Sheet(s). After identifying the contents of the spill, the material and contaminated soil will be removed and handled in keeping with the Waste Analysis Plan.

All spills should be reported as soon as possible to the Environmental Affairs Manager.

# 2. Solid Waste Spills

Uncontained spills of solid waste would necessitate physically removing the waste along with sufficient soil to insure that all possible contamination is removed. A pattern of soil sampling and analysis would be carried out until we could insure complete decontamination of soil. Disposal of the material would be according to our Waste Analysis Plan.

Should solid waste material spill into a liquid-containing sump, basin or ditch, the spill would be managed as stated in paragraph #2 under Liquid Spills. The collected material would be handled in accordance with the Waste Analysis Plan.

# SPILL CONTAINMENT AND CLEANUP EQUIPMENT

The following equipment is available at the authorization of the Emergency Coordinator or Area Supervisor.

<u>A</u> 1	vailable Equipment	General Location
a.	1 - 4,200 Gallon vacuum trucks	Truck Parking Area
b.	1 - All terrain vacuum truck	Incinerator, Drum
	,	Processing Area
c.	1 - Front-end loader	Landfill, Sussex yard
d.	Absorbents - sand, hay,	Mixing Facility
	fluedust, earth	
e.	Portable pumps	Laydown Yard, Landfill
f.	Dozers	Landfill
g.	Backhoes	Landfill'

# SPILL CLEANUP PROCEDURES BY AREA

# 1. <u>Incinerator Tank Farm</u>

If a non-contained spill occurs in any of these areas, it will be contained by placing absorbent over the spill. If the spill is great enough to enter the surface water run-off drains in these areas, the material will first emerge at Point #1 of the attached drawing. The valved gate to RW-4 is to be immediately opened to minimize the amount of material entering the 002 ditch. A vacuum truck used to recover the spilled material. If any material escapes from this point, a portable pump at the 002 dam shall be operated to reduce the water level or keep it constant and the spill material contained in 002.

### 2. Basin Area (South-West) Quadrant of the Site

If a non-contained spill occurs in this area serviced by RW-3, it will be contained by temporary earthen diking or by placing absorbent over the spill. If the spill is great enough to enter the surface runoff ditch, the valve gate shall be opened and the flow diverted into RW-3 to minimize the amount of material entering the 002 ditch. A vacuum truck shall be used to recover the spilled material. Should any material enter the 002 ditch, a pump at the 002 dam shall be operated to reduce the water level or keep it constant and the spill material contained in 002.

# 3. Basin Area (North-East) Quadrant of the Site and the Entrance Roadway

If a non-contained spill occurs in this area also serviced by RW-3, it will be contained by temporary earthen diking or by placing absorbent over the spill. If the spill is great enough to enter the surface water run-off ditches in these areas, the valve gate shall be opened and the flow diverted into RW-3 to minimize the amount of material entering the 002 ditch. A vacuum truck shall be used to recover the spilled material. Should any material enter the 002 ditch, a pump at the 002 dam shall be operated to reduce the water level or keep it constant and the spill material contained in 002.

# 4. Basin Area (East) Quadrant of the Site

Since this area serviced by RW-1 and RW-2 is not used for hazardous waste operations, there is little possibility of a spill in this area. However, if one should occur, it will be contained by temporary earthen diking or by placing absorbent over the spill. If the spill is great enough to enter the surface run-off ditches, it will automatically enter either RW-1 or RW-2 where it will be collected and removed by pump for treatment.

# 5. Basin Area (North-West) Quadrant of the Site

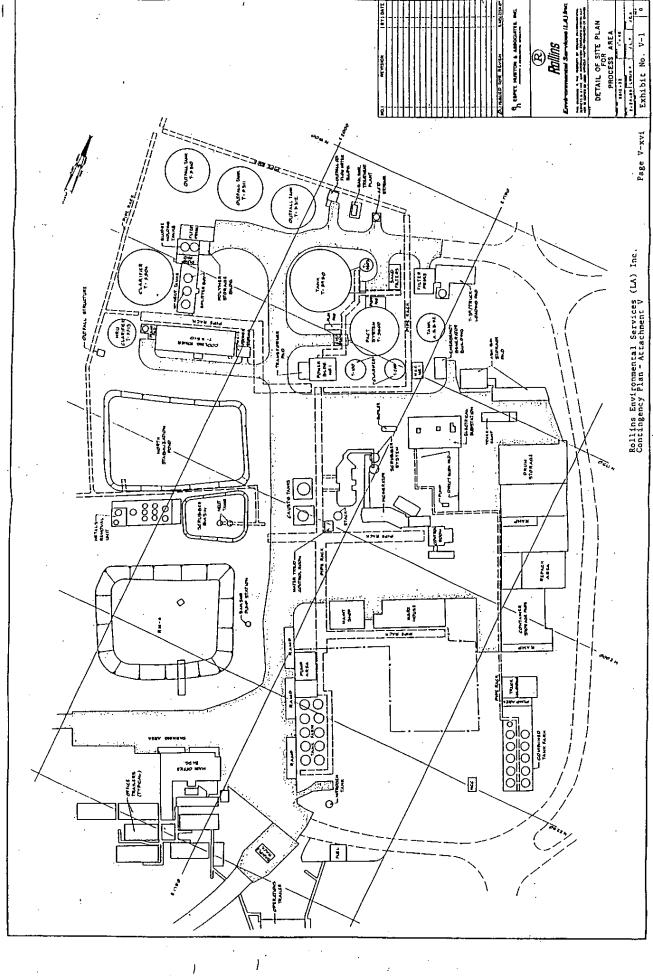
If a non-contained spill occurs from one of these basin areas, it will be partially contained by placing absorbent over the spill. If the spill is great enough to enter the surface water run-off ditches in these areas, the valve gate shall be opened to divert the flow into RW-5 to minimize the amount of material entering the 002 ditch. A vacuum truck shall be used to recover the spilled material. Should any material enter the 002 ditch, a pump at the 002 dam shall be operated to reduce the water level or keep it constant and the spill material contained in 002.

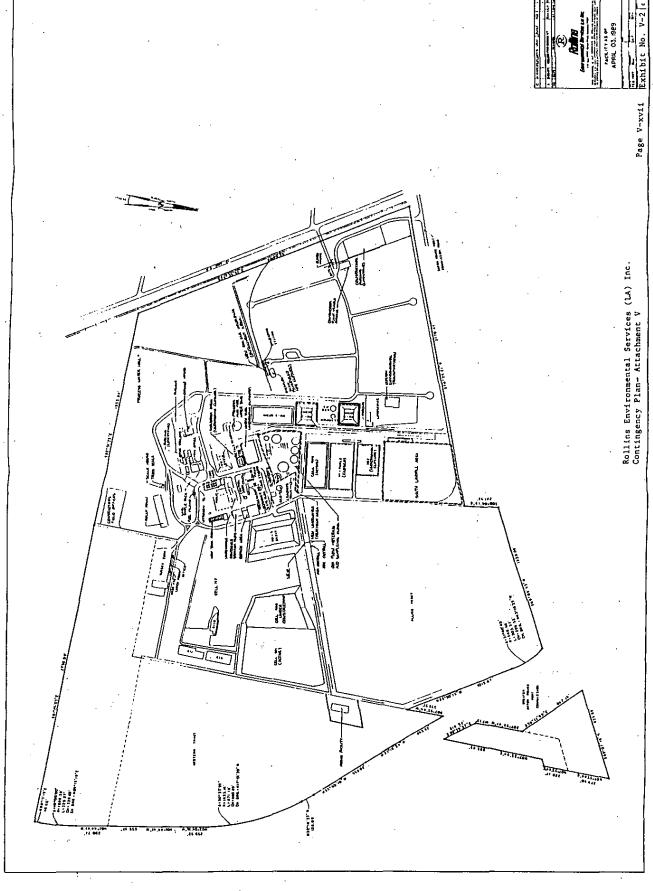
# 6. Waste in Plant Effluent Resulting from any Area - Final Containment

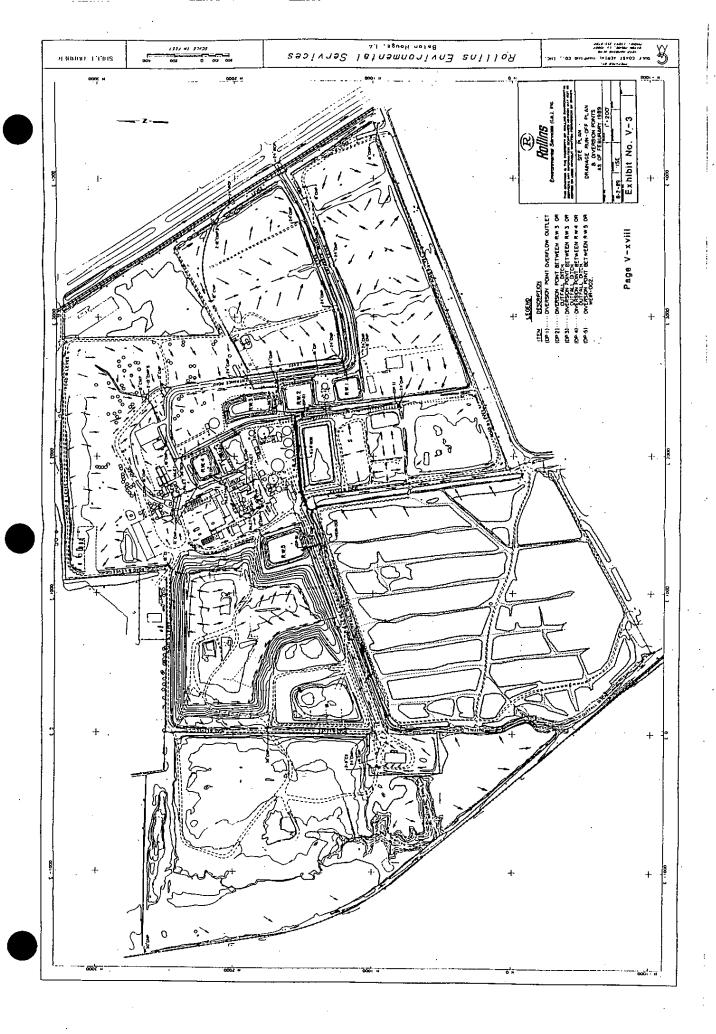
If oil or other waste material escapes and all previously mentioned counter measures fail, the effluent ditch is to be closed with a dozer using dirt. A vacuum truck is to be used to recover the spilled material. Auxiliary pumps shall be used as necessary to pump water over the blocked point, or pump contaminated water to the appropriate treatment as determined by analysis.

### 7. Leachate Collection Transfer Lines, Groundwater Recovery Lines and Yard Piping

Upon discovery, any localized leaks in the leachate collection system the groundwater recovery lines, or the yard, piping will be repaired. The spill plus contaminated water or soil will be removed until sample analysis indicates that the removal is complete. The removed waste will be handled in accordance with our Waste Analysis Plan.







# EMERGENCY ORGANIZATION STAFFING

Position in the Emergency Organization	<u>Name</u>	Primary Address	<u>Home</u> <u>Telephone</u>
Emergency Coordinator	T. Bramlette	530 Castle Kirk Baton Rouge, LA 70808	767-0135
Alternate	On Shift Suprv*		·
Protection Chief	J. Bourg	861 Voorhies	273-1915
Alternate	M. Higgs	Baton Rouge, LA 70815 9411 Sagefield Dr. Baton Rouge, LA 70818	261-3781
Service Chief	J. Richards	15541 Malvern Hill	295-3959
Alternate	J. Hayes	Baton Rouge, LA 1134 Trammel Baton Rouge, La	275-6187
Transportation Chief	J. Richardson	4529 Little Farms	654-8156
Alternate	J. Arbuthnot	Zachary, LA 17218 Sharpsburg Baton Rouge, LA	292-2927
Contract Coordinator	R. Hays	13574 Minou Avenue Baton Rouge, LA	296-5515
Alternate	P. Kimble	13211 Camelot Baton Rouge, LA	275-7559
Personnel Chief	T. Eastman	10914 Maybeli Ct	292-0735
Alternate	E. Chevalier	Baton Rouge, LA 8519 Scarlett Baton Rouge, LA	923-3963
Communications Chief	J. Cope	3922 Emily	749-2671
Alternate	P. Bevars	Port Allen, LA 3232 Richmond Baton Rouge, LA	291-0159
Public Relations Chief	M. Higgs	9411 Sagefield	261-3781
Alternate	J. Bourg	Baton Rouge, LA 861 Voorhies Baton Rouge, LA	273-1915
Insurance Department	L. Moroz J. Burns	One Rollins Plaza Wilmington, DE 19899	479-2700 (302)

<sup>\*</sup>Shift Supervisor is the Emergency Coordinator at night, on week-ends, or holiday until relieved.

# **EMERGENCY CONTACT LIST**

Name and Position	Home <u>Telephone</u>	<u>Pager</u>
Tom Bramlette Vice President/Plant Manager	767-0135	338-7164
Jerry Cope Production Scheduler	749-2671	338-7166
Jake Richards O & M Manager	295-3959	338-7166
Phil Bevars Training Supervisor	291-6187	338-8191
John Hayes Operations Supervisor	275-6187	338-8191
Doug Johnson Shift Supervisor	778-1606	
Jay Lockwood I & E Supervisor	924-7876	<del></del>
Lee Savoy I & E Engineer	925-1268	
Ron Hill Day Shift Supervisor	261-8573	
Floyd Johnson Drum Pad Supervisor	261-8573	
Dwayne Garrett Shift Supervisor	769-5587	***
Jeff Pittman Shift Supervisor	665-0016	
David Frashier Technical Manager		338-7168
Edward Chevalier Laboratory Manager	923-3692	338-8187
James Bourg Safety Manager	273-1915	338-7726
Jerry Richardson C.E.T. Transportation Manager	654-8156	
Jeff Pittman Fire Chief	383-5343	338-7168

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\* Caustic: Caustic Soda (Process Halbrial) · HEU: Hetals Recevery Unit CHESSEL CHESSEL CHUSTIC F-21 EDUR 1-2u P. . . 1 1-3G -37 7-36 of hezardous waste (e.g., wet spots, dead propositions. tank system including secondary containment at a traction or technical behave to delive a resion or tigue of releases 83 N N ۴J N N Ŋ N ٠ ۰ ٠ ٤ ه. ٨. N ٨ <u>.</u> ئہ 64 N Curtass N. "K" Hitroryk nomina Strong all presidents ۵ Problem tound SEMERGENCY SEMERITOR FULL TONE Hory other THE DEPOSITE RESIDEN WHILE FIRST DEDICTION CORE FORM DIRECTOR THE THAT THEFT CHE THE LINE CHILL SHE The best or detects noted.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment V RES CLID

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Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment V

of herearchus words rely, wet Spots, dead competations.

# DAILY INCINERATOR INSPECTION

DATE:TIME:				
INSPECTED BY:			YES	NO
All Alarm Panels in operation, Lights OK, F	Horps so	ounding		<del> </del>
Control Room shutdown instrumentation for				+
	Uniction	ing normany		<del>                                     </del>
3. Afterburner draft OK				ļ
4. IWS, DC, KV, & MA are OK				<u> </u>
5. Flame Safeguard controls working				
6. Main shutdown damper in good order				
7. Trip valves in good order		- Loddby Primary Waste		<u> </u>
		- Loddby Secondary Waste		<del></del>
		- Thermox		<del> </del>
*	•	- Kiln Sludge		<del> </del>
		- Diesel		
		- Alkyl		<del>                                     </del>
		- Other (Specify in Remarks)		1
	O./			<del> </del>
8. Local mounted trip system instrumentation	OK	- Ouench	<del></del> -	<del> </del>
		- IWS Inlet		
		- ID Fan Damper		1
		- Spray Water Pressure		
•		- Other (Specify in Remarks)		
9. ID Fan vibrations OK				
10. Emergency Fire Water Quench system Ok	κ	·		<u> </u>
11. Pumps in good order		<del></del>		
12. Fans & motors in good order				<u> </u>
13. Valves & piping in good order				<u> </u>
14. Major equipment in good order - Kiln, Aft	terburne	er, Fans, Conveyor		
15. Evidence of waste leakage				<u> </u>
16. Stack in good mechanical condition				<u> </u>
NOTE: (PER SWP 1004)  1. Check all instruments listed for proper operat  2. Inspect all pumps, valves, piping for leaks and  3. Check all trip system equipment for operabilit  4. Check all major equipment for condition.  5. Note any deficiencies and corrective action in	tion. Id/or evi ity.			
REMARKS:				
RP.1420 (1/88)				

TANK FIELD INSPECTION AND REPORT

DATE: TIME:

TEMP BR NO. DIB PRESSURE H<sub>2</sub>0 OVERFILL
PROTECTIVE
E SYSTEM
OPERABLE? PAD VALVES OPEN OR CLOSED FILL VALVES OPEN OR CLOSED DISCHARGE VALVES OPEN OR CLOSED SPILLS/ OR ODORS CORRECTIVE ACTION (W.O. NO) ATTACHED

NOTE: Inspect all items below & indicate discrepancies and corrective action in remarks section. inspect all tanks, valves, piping and pumps for leaks, spills, odors, temperature changes, or unusual conditions

inspect hoses and littings for condition. Check all drip buckets to insure they are in position and empty.

Gas Meter Reading

Nitrogen

T-37

T-38

T-36

T-35

TOTAL

REMARKS:

7-T0 <del>7</del>-9 <u>.</u> 7.7 <u>.</u> 7.5

**T-3** 

7.4

Ţż ₫

TANK NO.

LEVEL %

GALLONS (X 1322 per foot

Check nitrogen system to insure tanks are properly padded. This includes tank pressure, vent (pressure relief), carbon canisters and N<sub>4</sub> leter Check tanks to be sure all N<sub>2</sub> pad valves are in the open position.

Check surrounding area for any irregularities such as damage or erosion of diking, seepage, etc. Check tank agitator seal for leaks

BP-148R (3/88)

# PUMP AND LUBRICATION CHECK LIST OPERATIONS HELPER

DATE:	OILER PROPE LEVEL	R	SEAL FL WATER (PRESSU	ON	SEAL LEAKING	ì	PUMP O DISCHAI PRESSU	IGE
PUMPS	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
N. FYBROC								
S. FYBROC								
E. CAUSTIC								
W. CAUSTIC					_			
E. CEILCOTE NaOH								
E. NaOH TRANSFER								
W. NaOH TRANSFER		-						
1. D. FAN								
F. D. FAN-LODDBY								
F. D. FAN KILN								
DEEP WELL					-			
FIREWATER								
FIRE H20 BOOSTER								
N. COOL TOWER P-101								
S. COOL TOWER P-102								
N. CONDENSER P-103								
S. CONDENSER P-104					·			
CEILCOTE 1&2 P-105				1				
CEILCOTE 3&4 P-106					!	-		
CEILCOTE 5&6 P-120					<del></del>			

## PUMP AND LUBRICATION CHECK LIST OPERATIONS - TREATMENT OPERATOR

DATE:	OILER PROPE LEVEL	R	SEAL FL WATER (PRESSU	ON	SEAL LEAKING	ì	PUMP O DISCHAI PRESSU	RGE
PUMPS	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
N. LODDBY FEED								
S. LODDBY FEED								
THERMOX FEED								
E. UNLOADING			_					
W. UNLOADING								
CIRCULATION/TRANSFER								
TANK FARM SUMP E & W								
DIESEL PUMP								
AGITATORS, T. F.								
T — 3			-					
T — 5								
T — 6				<del>                                     </del>				
T — 10							<del>                                     </del>	
AIR COMPRESSORS							<u> </u>	
NO. 1						<b> </b>		
NO. 2								
NO. 3					,			
NO. 4								
		-						
PORTABLE: Is battery charger pluggi	ed in and cables	connected	to battery	/: □ YE	S 🗆	NO		
	Operator			<del></del> .		Tin	ne	
	Operator					Tin	ne	
	Supervis	Of						
P-146R (R 2/89)	Supervis	or						

8P-146R (R 2/89) 00F 86-Rev. 2/17/89 Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment V EXHIBIT H-6
RELEASES TO THE AIR

#### ATTACHMENT VI

#### RELEASES TO THE AIR

Toxic or corrosive chemicals which are in the gaseous state at normal atmospheric temperature and pressure are not accepted for disposal at this waste disposal facility. The Rollins Environmental Services (LA) Inc. incinerator is maintained and operated to minimize the release of any toxic materials as a result of incomplete combustion. Incinerator operation is closely monitored, and the effective functioning of control devices is audited and records kept to assure conversion of potentially harmful materials into non-polluting forms.

For these reasons, potential sources of undesirable air pollutants is an uncontrolled fire resulting from lightning, equipment failure, etc. If such a fire did occur, or if a potentially harmful air pollutant was released for any reason whatsoever, the Emergency Coordinator must make a judgement based on quickly available data regarding the protection required for plant employees who must deal with the emergency. To this end, personal protective equipment in the form of self-contained breathing air equipment, impervious suits, footwear, and gloves, etc., is kept on site.

All of Rollins personnel are trained in response to such emergency situations and in the use of protective equipment. Additional personal protective equipment is available through "Mutual Aid".

Safety and personal protection equipment is also available for personnel who are called in to assist in the control of the emergency. Requests for this equipment would be handled through the Protection Chief.

If there are indications that potentially harmful concentrations of air pollutants will be carried beyond the boundaries of plant property, the Emergency Coordinator must contact the State Police unit in control of the emergency. He must provide all information available to him including the following:

- The chemical composition of the material which is burning. The Material Tracking System is the source of these data.
- Products of combustion which are considered likely to be produced.
- Air test data at the plant perimeter that can be obtained quickly.\*
- Air test outside plant on Scenic Hwy., New Rafe Meyer Road, Barge Canal Road and Brooklawn Road for emissions which may escape the plant perimeter.\*
  - \*Volatile Organic Analyzer to be utilized by Rollins technical personnel.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment VI

EXHIBIT H-7

BOMB THREAT

#### ATTACHMENT VII

#### BOMB THREAT

PROCEDURE:

**BOMB THREAT** 

PROCEDURE NO.: SWP-5028

DATE ISSUED:

September 23, 1985

#### <u>PURPOSE</u>

To establish an orderly procedure of response to be followed when a bomb threat is received.

#### **DISCUSSION**

A bomb threat may be received at any time and may or may not be valid. The recipient of the call must recall and record as detailed and accurately as possible the information requested on the attached Bomb Threat report. It is absolutely essential that the received information be transmitted quickly and accurately to management personnel. This information will be used by management to determine what course of action will be followed. When notified of a bomb threat, management must notify the Louisiana State Police, Hazardous Materials Section at the Plant Manager's discretion or the following may occur: begin an orderly evacuation of non-essential personnel; begin a shutdown of all operations; search the operating areas and maintain a vigil until the all clear is given.

#### **PROCEDURE**

- Call recipient when a call is received, immediately contact the following personnel: 1.
  - Vice-President Tom Bramlette A.
  - Operations and Maintenance Manager Jake Richards B.
  - C. Safety Manager - James Bourg
  - D. Environmental Affairs Manager - Michael Higgs
  - E. Shift Supervisor - On Duty
- 2. Call recipient is to complete and pass along (to management), the Bomb Threat Report.
- 3. A management designee - notify the Louisiana State Police Hazardous Materials -Explosives Section 925-6178 during normal working hours; or 925-6595 during off hours.
- 4. Notify/Call off-duty management if the call is received during off hours.
- 5. Notify security to stop all incoming traffic by closing the main gate.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment VII

- 6. Assemble available management personnel, discuss, and assign responsibilities.
  - A. Divide available personnel and assign areas for notifying of evacuation order and area to assemble.
  - B. Begin a systematic shutdown of operations, including:

All transfer of material, including a shut off of waste feed to the incinerator, truck/car unloading.

- C. If time permits, more than two (2) hours notice, divide the operating areas and systematically search. If possible, assign personnel to an area they are familiar with: with instructions to look or an object; a box, a pipe, anything unusual; to look under, in, atop everything.
- D. Instruct to not touch anything unusual or an obvious device, but to contact the Emergency Coordinator.
- 7. If something is found, immediately cease all search operations and notify the State Police representative.
- 8. If nothing is found, and a time had been given; wait one (1) hour after the supposed time to before resuming operations.

#### **EXHIBITS**

- VII-1. Bomb Threat Report To be completed by call recipient.
- VII-2. Contingency Plan Emergency Call List To use as reference.
- VII-3. Checklist Located Next to Telephone.

#### EXHIBIT VII-1

#### **BOMB THREAT REPORT**

TIME:			
EXACT CONVERSAT	ION:		·
	······································		
			· · · · · · · · · · · · · · · · · · ·
	,		
•	•		
DESCRIPTION OF VO	JICE:	<del></del>	
			<del> </del>
BACKGROUND NOIS	SE:		
			<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>
APPROXIMATE AGE	/NATIONALITY:		
PHONE CONVERSAT	TON/INFORMATION	N REPORTED TO:	
TIME:			
CALL RECIPIENT:			
	IN-PLANT		
NAME	TELEPHONE	TELEPHONE	PAGER NO.
TOM BRAMLETTE	501	767-0135	338-7164
JAKE RICHARDS	<b>58</b> 6	295-3959	338-7166
JERRY COPE	506	749-2671	379-0585
JAMES BOURG	<b>60</b> 8	273-1915	338-7726
MICHAEL HIGGS	610	261-3781	338-7163
Rollins Environmental S	Services (LA) Inc.		
Contingency Plan - Atta	achment VII		August, 1989

#### EXHIBIT VII-2

#### CONTINGENCY PLAN EMERGENCY CALL LIST

FIRE/EMERGENCY/POLICE		911
MUTUAL AID		343-4805
HAZARDOUS MATERIAL RESPONSE CENTER (Louisiana State Police Hotline)		925-6595
LOUISIANA STATE POLICE HAZARDOUS MATERIALS UN	IT	925-6113
Acadian Ambulance (Baton Rouge)		267-1111
Civil Defense		389-3035
Doctor - James Grace		687-4440
FIRE  Fire Department (Baker)  Fire Department (Brownsfield Volunteer)  Fire Department (Scotlandville)		775-3711 383-4425 383-4425
Gulf States Utilities		769-8670
HOSPITAL  Lane Memorial  Baton Rouge General		658-4000 387-7600
Louisiana Department of Environmental Quality Air quality Hazardous Waste Water Quality		342-1265 342-1206 342-1354 342-1234
Mayor-President's Office (Baton Rouge)		389-3100
Police (Baton Rouge)		911
Red Cross		926-4534
School Board		926-2790
Sheriff (Scotlandville)		778-0700
Weather Service		389-0308
U. S. EPA Region VI Emergency Number	(214)	655-2222
National Response Center	(800)	<b>424</b> -8802

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment VII

#### **EXHIBIT VII-3**

SIGNAL SOMEONE TO LISTEN	IN, IF POSSIBLE.
INSTRUCTIONS: Be calm and courteous. Lister keep the caller on the line. Obtain as much its location. Legitimate callers usually vis more data by expressing a desire to save live supervisor/security officer.	detail as possible about the bomb and the to avoid injury or death. Request
QUESTIONS TO ASE:	CALLET'S VOICE:
<ol> <li>When is the bomb going to explode?</li> <li>Where is it?</li> </ol>	Calm Normal Angry Distinct Excited Slurred Slow Nasal
3. What does it look like?	Soft Liep
4. What kind of bomo is it?	Loud Raspy Laughter Deep Crying Ragged Accent Clasring throat Familiar Deep breathing Whispered Cracking whice
5. What will cause it to explode?  6. Did you place the bomb?	Familiar Deep breathing Whispered Cracking voice Disguised
	If voice is familiar, who did it sound like?
8. What is your name a phone number!	BACKGROUND SOUNDS:
9. Are you a memoer of an organization?  EYACT EMPRING OF THE THEFAT:	Street noises Crockery Animal noises Voices PA System Husic Bouse noises Motor Office machines Clear Factory machines Quiet Static Airplanes Party atmosphere Other From within site From outside site
	THREAT LANGUAGE:  Well spoken (educated)
Sex of caller:Racc:	Foul Irrarional
Number at which call is received:	Incoherent Taped
Time: Date:_/_/_	Threat sounded like it was being read.
	Person you notified:  Your name:  Position:  Phone Number:  DER YOUR TELEPHONE

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment VII

## EXHIBIT H-8 WATERWORKS WARNING NETWORK PLAN

#### ATTACHMENT VIII

#### WATERWORKS WARNING NETWORK PLAN

Rollins Environmental Services (LA) Inc. is very conscious of the need to protect our environment and all persons and facilities that surround our site.

Our area of concern is the potential contamination of waterways; specifically the Mississippi River. If sufficient quantities of hazardous or toxic materials enter the river, this could gravely affect downstream potable and/or industrial water users.

If we have knowledge of any discharge from our site, we must immediately notify the Office of Health Services and the Department of Environmental Quality as outlined on pages six (6) and seven (7) in the following current Waterworks Warning Network Plan for the lower Mississippi River.

## Lower Mississippi River

### WATERWORKS WARNING NETWORK PLAN

By

Department of Health and Hospitals

Office of Public Health

Division of Regulatory Services

In Cooperation With

Waterworks Operators and Officials

The Louisiana Environmental Control Commission

and

Industries of Louisiana

June 1988

SLF -8.

### LOWER MISSISSIPPI RIVER WATERWORKS WARNING NETWORK PLAN

#### DEPARTMENT OF HEALTH AND HOSPITALS OFFICE OF PUBLIC HEALTH DIVISION OF REGULATORY SERVICES

#### CONTENTS

Introduct	tion	1
Plan and	ProceduresPage	3
Appendix	"A" (Location Map)Page	5
Appendix	"B-1" (DHH Phone Listing)Page	6
Appendix	"B-2" (DEQ Phone Listing)Page	7
Appendix	"B-3" (Additional Phone Listing)Page	8
Appendix	"C" (Waterworks Phone Listing)	9

REVISED JUNE 1, 1988

# LOWER MISSISSIPPI RIVER WATERWORKS WARNING NETWORK DEPARTMENT OF HEALTH AND HUMAN RESOURCES OFFICE OF PREVENTIVE AND PUBLIC HEALTH SERVICES DIVISION OF ENVIRONMENTAL HEALTH

Past experiences of almost complete deterioration of Mississippi River water quality from the health, safety, taste, and odor standpoint due to accidental discharges by industry or shipping vessels, indicated a need for development of a warning system so that all water treatment plants using Mississippi River water could take any necessary precautions to assure the production of the best quality water possible in the event of such accidental discharges. A warning system involving the participation of the waterworks facilities, the State Department of Health and Human Resources(DHHR), the State Department of Environmental Quality(DEQ), and industry was therefore developed to provide a reasonable safeguard to maintain the quality of the drinking water going to consumers.

The original "Waterworks Warning Network" plan and directory was published by DHHR on June 8, 1960. The purpose of this latest revision of the Plan is primarily to update directory listings. Because the original plan has operated satisfactorily to date, no basic changes are contemplated at this time.

As was noted in the previous edition of this plan, the U.S. Environmental Protection Agency has developed rules and regulations pertaining to the reporting and clean-up of oil as authorized by the Water Pollucion Control Act amendments of 1972, Public Law 92-500, § 311.

As was discussed in the previous edition of this plan, the Louisiana Stream Control Commission had, under their rule-making authority, promulgated rules requiring the reporting of pollutant spills into the River. Since that time. however. jurisdictional responsibilities of the Stream Control Commission have been transferred to DEQ under the aegis of the Louisiana Environmental Control Commission(ECC) which is empowered to applicable rules and regulations of the former sustain all Commission. That which follows is a reprint of the RULE (pertinent to this plan) which was originally published in 1977:

#### RULE

DEPARTMENT OF WILDLIFE AND FISHERIES STREAM CONTROL COMMISSION

Rule Relative to Dischargers, Stationary or Mobile Sources, to the Mississippi River Downstream of the Old River Control Structure and Users of Bayou Lafourche.

1. Any owner or person in responsible charge of a vessel, wharf, or an offshore facility shall, as soon as he has knowledge of any discharges from the vessel or facility of any sufficient quantity which could interfere with downstream potable and/or industrial water usage, immediately execute by telephone, radio telecommunication, or other similar means of rapid communication, the alert procedures of the latest edition of the Waterworks Warning Network Plan, Lower Mississippi River, by the Bureau of Environmental Services, Office of Health Services and Environmental Quality.

2. A significant abnormality detected through self-monitoring of a permitted discharge shall cause the immediate notification to the Louisiana Stream Control Commission. The reporter may then be directed to initiate the warning system on a precautionary basis because there is reason to suspect that sufficient quantities of substance(s) of a known or unknown but possibly noxious nature may have been released which could interfere with downstream potable and/or industrial water usage. The cause of the abnormality shall be determined by the operator as expeditiously as possible and the determination duly communicated to those previously notified.

This rule shall be effective December 1, 1977.

J. Burton Angelle, Chairman Stream Control Commission

(From the Louisiana Register Volume 3, Number 10 - October 20, 1977)

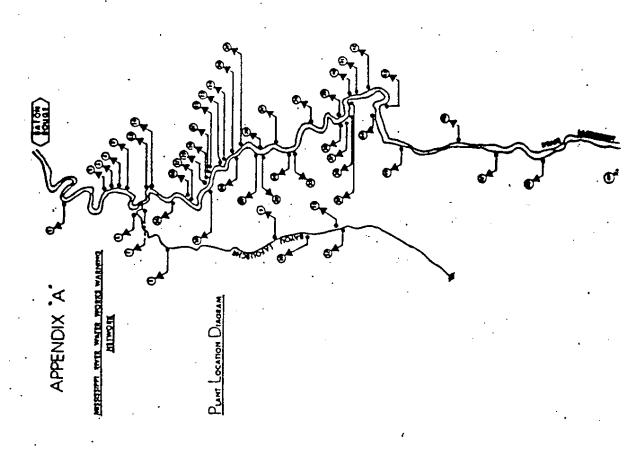
## LOWER MISSISSIPPI RIVER WATERWORKS WARNING NETWORK

#### **PROCEDURES**

The purpose of the Warning Network Plan is to set up the specific procedures to be followed and to provide a listing of the responsible persons to be contacted in the event of a reported discharge. These procedures are as follows:

- 1. If a <u>water plant operator</u> becomes aware of a deterioration in the quality of his raw water, either by his personal observation or by reports from consumers using the finished water, or learns of discharges which may affect his supply or others, he will immediately notify the nearest downstream plant with a water intake (see Appendix "C"), as well as one of the DHHR. Office of Health Services and Environmental Quality, Division of Environmental Health officials listed in Appendix "B," of this Plan. It will be necessary to contact only one of the Division personnel listed, but they should be called in the order indicated.
- The Division of Environmental Health Official, 2. receiving the report, will proceed to advise all those downstream plants with a water intake which might conceivably be affected by the discharge, in a descending order from the point of the discharge. The names and telephone numbers of the responsible waterworks personnel to be notified are listed in Appendix "C" of this Plan, by facility, according to their location on the River, beginning with the Dow Chemical Company in Plaquemines, A geographical Louisiana, and proceeding downstream. diagram, showing the relative locations of these water River and Bayou intakes along both the Mississippi Lafourche, is included as Appendix "A".

- 3. As a practical matter, the U. S. Coast Guard is the first to be notified of the majority of spills or other incidents affecting river water quality, and therefore routinely notify DHHR personnel of such incidents. For this reason, a water plant operator, upon becoming aware of a spill, should also immediately notify the Coast Guard of such (see Appendix "B<sub>3</sub>").
- 4. Inasmuch as the Sheriff's Offices in a number of the "River Parishes" have, in the past, been of great assistance in notifications of waterworks personnel, the phone numbers for various Sheriff's Offices, as well as State Police, are also listed in Appendix "B<sub>3</sub>".
- 5. Additionally, it should be noted that reporting of certain abnormalities detected in permitted discharges is also required by DEQ regulations. In those instances where such reportable permit violations occur, the permittee should, in addition to the standard notifications to be made in accordance with this plan, notify directly one of the DEQ officials listed in Appendix "B<sub>2</sub>". As above, it is necessary to contact only one of the DEQ personnel listed, but they should be called in the order indicated.
- 6. In emergency situations, the Bayou Lafourche Fresh Water District will, upon notification of a spill, in turn notify those plants with intakes in Bayou Lafourche.



Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment VIII

#### APPENDIX "B-1"

# DHH / OPH DIVISION OF REGULATORY SERVICES 325 Loyola Avenue (P O Box 60630) New Orleans, LA 70160

# PERSONNEL SHOULD BE CONTACTED IN ORDER OF LISTING >>> For Spills ABOVE the Donaldsonville Sunshine Bridge <<< (Above Mile 167.4 AHP)

Telephone: Office - 342-1616

Baton Rouge

Nights, Weekends and Holidays --

James P. Antoon Water Program Supervisor Home - 261-6109 Baton Rouge

William J. Hughes Chief Engineer

Home - 272-1450

Baton Rouge

>>> For Spills <u>BELOW</u> the Donaldsonville Sunshine Bridge <<< (Below Mile 167.4 AHP)

63 \( - 2400 \)
Telephone: Office - 826-2400

New Orleans

Office - 568+5100 16/1/...

New Orleans

Nights, Weekends and Holidays --

Effie Michalos

Home - 833-1853

. Water Program Supervisor

Metairie

Digital Beeper - 568-7747 #-5066

Fred R. Corliss

Home - 288-3953

Regional Engineer

New Orleans

Digital Beeper - 568-7747 #-5068

R. Douglas Vincent

Home - 835-0215

District Engineer

Metairie

Digital Beeper - 568-7747 #-5070

T. Jay Ray

Home - 885-5648

Water Program Administrator

Metairie

Kenneth Hemphill
Oyster Program Administrator

Home - 737-5941

River Ridge

#### APPENDIX "B-2"

#### DEPARTMENT OF ENVIRONMENTAL QUALITY

# OFFICE OF WATER RESOURCES Water Pollution Control Division P O Box 44066 Baton Rouge, LA 70804

#### PERSONNEL SHOULD BE CONTACTED IN ORDER OF LISTING

NAME	OFFICE PHONE	HOME PHONE
Dale Aydell	1504 1755-2110 Baton Rouge	(504) 689-6546 Baton Rouge
David Wagenecht	(504)765-2410 Baton Rouge	(504)336-1423 Baton Rouge
Elaine Sorbet	(504)765-2405 Baton Rouge Digital Bee	Baton Rouge
Bruce Hammatt	(504)342-8930 Baton Rouge	(504)766-3883 Baton Rouge
Louis Johnson	(504)342-8930 Baton Rouge	(504)92 <del>6-344</del> 0 Baton Rouge
Dale Givens	(504)342-9022 Baton Rouge	(504)275-7500 Baton Rouge

NOTE: If the above personnel cannot be contacted, other DEQ personnel may be contacted through the Department's 24-hour number -- (504)342-1234

#### APPENDIX "B-3" ADDITIONAL PHONE LISTINGS

#### U. S. COAST GUARD

Marine Safety Officer 1440 Canal Street New Orleans, LA 70112

Telephone: Pollution Control Desk - 589-6261

Public Information

- 589-4218

#### LA DEPARTMENT OF PUBLIC SAFETY

Office of Emergency Preparedness

Telephone: 24-hour Number

- 342-5470

Baton Rouge

#### Office of State Police

Telephone:

Troop A - 292-8200

Baton Rouge

Troop B

- 568-5751

N.O./Metairie

Troop C - 868-5964

Gray/Raceland

568-5964 (N.O. #)

#### St. Charles Parish Sheriff's Office

Telephone: 24-hours

- 783-6807

468-3440(Kenner #)

#### St. John the Baptist Parish Sheriff's Office

Telephone: 24-hours - 652-6338

#### St. James Parish Sheriff's Office

Telephone: 24-hours

- 562-2210

Emergency Coordinator - 562-2300

8

#### APPENDIX "C"

#### DIRECTORY OF WATER PLANTS DRAWING WATER

FROM THE MISSISSIPPI RIVER

#### LISTED IN ORDER FROM BATON ROUGE TO THE MOUTH OF THE RIVER

FACILITY

RESPONSIBLE PERSONNEL

1. Dow Chemical Company USA Division Plaquemine, LA (209.6 miles AHP)

Ask for Supervisor on Duty

Telephone: 389-8888 Baton Rouge 389-8889 Baton Rouge 642-4321 x-8888 Plaquemine

2. Allied Signal Corporation
 Geismar Works
 Geismar, LA
 (187.0 miles AHP)

Ask for Supervisor on Duty

Telephone: 642-2731 Baton Rouge 642-2749 Baton Rouge 642-8311 Baton Rouge

3. Borden Chemical

Geismar, LA (184.9 miles AHP)

Contact Utilities Shift Supervisor

Telephone: 387-5101 Baton Rouge 387-6681 x-318 Baton Rouge 673-6161 Gonzales

Pat D. Duggan, Utilities Supt. Home Phone: 291-1724 Baton Rouge

Carl Luce

Home Phone: 622-2356 Galvez

4. BASF Corporation Chemicals Division Geismar, LA (183.8 miles AHP) Contact Utilities Shift Supervisor
Telephone: 387-0631 x-2569 Baton Rouge
473-9871 Donaldsonville

Harry Stafford, Utilities Mgr. Home Phone: 673-8363 Gonzales E. J. Niedbalski, Utilities Supt. Home Phone: 766-4473 Baton Rouge

5. Shell Chemical Company Geismar Plant Geismar, LA (183.0 miles AHP)

Telephone: 379-6222 Baton Rouge 473-4261 or 62 Donaldsonville 588-7992 New Orleans

Process Supervisor, Utilities Home Phone: 379-6240 Baton Rouge Supervisor - Tank Farm / Marine Home Phone: 379-6576 Baton Rouge

9

6. Peoples Water Service Co.

Donaldsonville, LA (175.5 miles AHP)

Telephone: 473-7603 Donaldsonville 473-7612 Donaldsonvi

Fred D. Overman, Manager

Home Phone: 473-8368 Donaldsonville Donald F. Landaiche, Asst. Manager Home Phone: 473-4880 Donaldsonville

7. Bayou Lafourche Fresh Water District Thibodaux, LA (175.5 miles AHP)

Telephone: 473-7539 Donaldsonville 473-4815 Donaldsonville 473-7155 Donaldsonville

Eddie Bellina, Plant Superintendent Home Phone: 473-7539 Donaldsonville

John C., Spano, Chairman

Home Phone: 473-7235 Donaldsonville

8. Assumption Parish Waterworks District #1 Napoleonville, LA (175.4 miles AHP)

Intake in Bayou Lafourche Telephone: 369-6156 Napoleonville

Terry P. Aucoin, Plant Superintendent Home Phone: 369-6156 Napoleonville James Naguin, Distribution Supt. Home Phone: 369-7548 Napoleonville

9. City of Thibodaux Water Teatment Plant Thibodaux, LA (175.4 miles AHP)

Intake in Bayou Lafourche Telephone: 446-7236 Thibodaux 447-3767 x-218 Thibodaux 447-3767 x-223 Thibodaux David Hebert, Director of Public Works Home Phone: 446-8264 Thibodaux

Home Phone:

10. Terrebonne Parish Waterworks District #1 Lockkport, LA (175.4 miles AHP)

Intake in Bayou Lafourche Telephone: 879-2495 Houma 868-1242 Houma

Prosper Toups, Chief Engineer Home Phone: 872-3498 Houma Stephen Hornsby, Plant Engineer Home Phone: 594-3510 Bourg

11. Lafourche Waterworks District #1 Lockport, LA (175.4 miles AHP)

Intake in Bayou Lafourche

Telephone: 532-6924 Lockport 532-3667 Lockport

1-800-344-1580 Lockport

Eldon J. Breaux, General Manager Home Phone: 537-6508 Raceland

Albert Sevin, Purification Div. Mgr.

Home Phone: 532-2478 Lockport

12. Town of Lockport Lockport Waterworks Lockport, LA (175.4 miles AHP)

Intake in Bayou Lafourche

Telephone: 532-3191

Lockport

532-3117

Lockport

Larry Ledet, Water Plant Supervisor Home Phone: 532-2850 Lockport

Gillis LeBlanc, Utilities Commissioner

Home Phone: 532-2734 Lockport

13. Ormet Corporation

Burnside, LA (169.5 miles AHP) Operations person on duty on off shift Telephone: 473-9241 Donaldsonville

Gonzales 644-2105

473-9241 x-360 Donaldsonville

T. G. Temple, Coordinator, Alumina Plant

Home Phone: 293-7797 Baton Rouge

F. G. Sikes, Manager, Technical Services

Home Phone: 647-0959 Gonzales

14. E. I. duPont DeNemours & Co. Burnside Plant Convent, LA (169.2 miles AHP)

Telephone: 473-8618

Donaldsonville

Lane L. Hash, Plant Manager

Home Phone: 665-6870 Denham Springs Michael Zatorski, Senior Engineer Home Phone: 293-3446 Baton Rouge

15. Texaco Refining & Marketing, Inc Convent Facility Convent, LA (168.1 miles AHP)

Telephone: 562-7681 x-241 Convent

562-7681 x-205 Convent

J. D. Price, Supervisor of Operations Home Phone: 291-8538 Baton Rouge T. J. Martin, Chief Power Engineer Home Phone: 291-6783 Baton Rouge

Agrico Chemical Company Faustina Works Burnside, LA (166.9 miles AHP)

Telephone: 473-4271 Donaldsonville 673-8802 Gonzales

387-0831 Baton Rouge

Jim Waites, Production Manager Home Phone: 924-4419 Baton Rouge

Susan Stewart, Environmental Control Mgr

Home Phone: 293-7003 Baton Rouge

265-4828

17. St. James Parish Utilities Waterworks Dist. #1 Convent, LA (154.1 miles AHP)

Telephone: 562-2285

Convent Vacherie

Leonard Roussel, Supervisor Home Phone: 562-3561 Convent Norman Russell, Operator ... Home Phone: 869-9826 Gramercy

1B. St. James Parish Utilities Waterworks Dist. #2 Vacherie, LA

(154.2 miles AHP)

Telephone: 265-3632

Vacherie

265-4828

Vacherie

Leslie Cortez, Supervisor Home Phone: 265-3709 Vacherie George Oubre, Jr., Operator-Home Phone: 265-3590 Vacherie

19. Town of Lutcher Lutcher Waterworks Lutcher, LA (147.4 miles AHP)

Telephone: 869-5823

Lutcher

869-5635

Lutcher

869-5564

Lutcher

P. J. Amato, Water Commissioner Home Phone: 869-3647 Lutcher Virgia LeBlanc, Operator Home Phone: 869-4329 Lutcher

20. Town of Gramercy Gramercy Waterworks Gramercy, LA (146.7 miles AHP)

Phone #1 is Office of Mayor (A. Calcagno)

Telephone: 869-8580 Gramercy

869-4403

Gramercy

Godfrey Millet, Town Foreman Home Phone: 869-5618 Gramercy

Robert Duhe, Operator

Home Phone: 872-4680 Houma

21. Colonial Sugars, Inc.

Gramercy, LA (146.3 miles AHP) Telephone: 529-1102

New Orleans Gramercy

869-5521

Robert Trout, Chief Engr., Maintenance Home Phone: 764-8278 Destrahan

Al Seymour, Asst Chief Engr., Electrical Home Phone: 869-3887 Gramercy

22. Kaiser Aluminum & Chemical Corp.

Gramercy Plant Gramercy, LA (145.3 miles AHP) Telephone: 869-2237

Gramercy

869-2207

Gramercy

869-2146

Gramercy

J. G. Launey, Operations Manager Home Phone: 927-2779 Baton Rouge Jack Lashover, Environmental Manager Home Phone: 766-7220 Baton Rouge

23. Marathon Petroleum Company La. Refining Div. Garyville, LA (140.0 miles AHP)

Telephone: 535-2241 x-2205 Garyville

535-2241 x-2353 Garyville

C. Blake Harmon, Environ. Coordinator

Home Phone: 891-6277 New Orleans

Daniel H. Irvin

Home Phone: 469-5470 St. Rose

24. St. John the Baptist Parish Consolidated WW #1

Reserve, LA

(139.3 miles AHP)

Lions Water Plant

Telephone: 536-2489

Reserve

535-2387

Reserve

Farrell Weber, Director of Utilities Home Phone: 652-3704 LaPlace Harold LeBoeuf, Superintendent Home Phone: 535-6548 Reserve

25. St. John the Baptist Parish Consolidated WW #1

Edgard, LA

(139.3 miles AHP)

Edgard Water Plant (Daytime Operation Only

Telephone: 497-3251 Edgard

535-2387

Reserve

Farrell Weber, Director of Utilities

Home Phone: 652-3704 LaPlace Harold LeBoeuf, Superintendent Home Phone: 535-6548 Reserve

5. Godchaux-Henderson Sugar Co.

Reserve, LA (138.5 miles AHP) (Daytime Operation Only)

Telephone: 523-3007

New Orleans 536-1161 Reserve Toha

Farrell Weber, Director of Utilities Home Phone: 652-3704 LaPlace Harold LeBoeuf, Superintendent

Home Phone: 535-6548 Reserve

27. E. I. duPont deNemours & Co. Pontchartrain Works LaPlace, LA (136.0 miles AHP)

Telephone: 525-4004 New Orleans 536-1141 x-2213 Reserve mon 536-5213 Reserve

G. E. Burge

Home Phone: 345-9561 Hammond

L. J. Piranio

Home Phone: 885-6916 Metairie

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28. Occidental Chemical Corp.

Taft, LA (129.0 miles AHP) Ask for Shift Supervisor

Telephone: 783-6661 x-2263 Taft

783-6661 x-2317 Taft

783-6661 x-2209 Taft L. E. Hebert, Jr., Sr. Environ. Engr. Home Phone: 785-2498 Luling . . : -: 5

B. Moore, Production Manager Home Phone: 785-1832 Luling

29. Union Carbide Corp. Industrial Chemical Taft, LA (128.5 miles AHP)

Telephone: 468-4235 Metairie 468-4387 Metairie 468-4568 Metairie

D. C. Price, Dept Head, Energy Systems Home Phone: 785-0011 Luling

P. F. Normand, Dept Head, Env Protection Ē.

Home Phone: 785-0613 Luling

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30. Shell Oil Company Norco Complex Norco, LA (126.0 miles AHP)

Telephone: 465-7767 Kenner 465-7111 Kenner 465-7334

Kenner W. L. Caughman, Mgr., Env. Conser. Dept.

Home Phone: 764-7743 Norco

R. D. Green, Supervisor, Dist. Field Dept.

Home Phone: 652-3374 LaPlace

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment VIII

31. St. Charles Parish Waterworks Dist. #1
New Sarpy, LA
(125.1 miles AHP)

Telephone: 764-2829 New Sarpy

Larry Martinez, Superintendent Home Phone: 764-9458 New Sarpy Jimmy Keller, Asst. Superintendent Home Phone: 764-9682 Destrahan

32. St. Charles Parish Waterworks Dist. #2 Luling, LA (120.6 miles AHP)

Telephone: 785-6366 Luling 785-6361 Luling

Jack Spiers, General Superintendent Home Phone: 785-8166 Luling

Dondi Troxler, Plant Foreman Home Phone: 431-8347 Ama

33. American Cyanamid Company Fortier Plant Westwego, LA (114.6 miles AHP) Night Superintendent No. Manned 24 Hours Telephone: 431-9511 Westwego 431-6241 Westwego

431-6241 Westwego 431-6497 Westwego

Night Superintendent

Home Phone: 431-6353 Westwego

Frank J. Goletz, Mgr, Acid/AMD/Prod.Ser.

Home Phone: 764-6835

34. East Jefferson Waterworks
 District #1
 Jefferson, LA
 (105.4 miles AHP)

("Lab" Number for East & West Jefferson)
Telephone: 838-4312 Metairie

838-4322 (Supt) Metairie 838-4305 (Lab) Metairie

Bill Watson, Superintendent Home Phone: 467-8775 Metairie Wayne Koffskey, Chief Chemist Home Phone: 469-2440 Kenner

35. N.O. Sewerage & Water Board Carrollton Plant New Orleans, LA (104.7 miles AHP) Carrollton Water Plant

Telephone: 861-0331 861-4955

New Orleans New Orleans

Louis Langley, Purification Supervisor Home Phone: 738-3223 River Ridge William Wells, Purification Supt. Home Phone: 392-0077 New Orleans

Bechnelf Home) 488-0004

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment VIII - City of Westwego
Water Purification
Westwego, LA
(101.5 miles AHP)

Telephone: 341-2828 Westwego
341-3424 or 25 Westwego
347-5745 Westwego
Robert Billot, Waterworks Coordinator
Home Phone: 347-7424 Westwego

Home Phone: 347-7424 Westwego Frank T. Adams, Chief Operator Home Phone: 347-1332 Westwego

37. West Jefferson Waterworks
 District #2
 Marrero, LA
 ( 99.1 miles AHP)

Telephone: 349-5080 Marrero 349-5085 (Supt) Marrero 838-4305 (Lab) Metairie

Gary Hammond, Superintendent Home Phone: 393-0365 Gretna Wayne Koffskey, Chief Chemist Home Phone: 469-2440 Kenner

38. City of Gretna Gretna Waterworks Gretna, LA ( 96.7 miles AHP)

Telephone: 363-1540 Gretna 363-1543 Gretna 363-1544 Gretna

John Laughlin, Dir., Water, Sewage, Drainage

Home Phone: 361-0035 Gretna Gerald Mataya, Superintendent Home Phone: 362-8579 Gretna

39. N. O. Sewerage & Water Board Algiers Plant Algiers, LA ( 95.8 miles AHP)

Algiers Water Plant
Telephone: 361-4331 New Orleans
362-7210 New Orleans

Marvin Russell, Purification Supervisor Home Phone: 866-9070 New Orleans William Wells, Superintendent Home Phone: 392-0077 New Orleans

40. Amstar Sugar Corporation Chalmette Refinery Chalmette, LA ( 90.8 miles AHP)

Telephone: 271-5331 x-421 Chalmette 271-5331 x-323 Chalmette 271-5331 x-290 Chalmette

J. D. Roussel, Supt. of Services Home Phone: 279-8764 Chalmette

Kent Becnel

Home Phone: 536-4692 Reserve

#### **EXHIBIT H-9**

EMERGENCY CONTACTS AND TELEPHONE NUMBERS

#### ATTACHMENT IX

## EMERGENCY CONTACTS AND TELEPHONE NUMBERS

The OUTSIDE AGENCY AND ASSISTANCE EMERGENCY CALL LIST (Page ii) is utilized when additional help from outside the plant is requested or when specific notifications must be made.

The EMERGENCY ORGANIZATION STAFFING is utilized when the Contingency Plan is implemented (Page iii).

The EMERGENCY CONTACT LIST (Page iv) is provided for supervisors in the event of an emergency incident that does not require implementation of the Contingency Plan but additional assistance is required.

#### OUTSIDE AGENCY AND ASSISTANCE EMERGENCY CALL LIST

FIRE/EMERGENCY/POLICE		911
MUTUAL AID		343-4805
HAZARDOUS MATERIAL RESPONSE CENTER (Louisiana State Police Hotline)		925-6595
LOUISIANA STATE POLICE HAZARDOUS MATERIALS U	JNIT	925-6113
Acadian Ambulance (Baton Rouge)		267-1111
Civil Defense		389-303 <i>5</i>
Doctor - James Grace		687-4440
FIRE Fire Department (Baker) Fire Department (Brownsfield Volunteer) Fire Department (Scotlandville)		775-3711 383-4425 383-4425
Gulf States Utilities		769-8670
HOSPITAL  Lane Memorial  Baton Rouge General		658-4000 387-7600
Louisiana Department of Environmental Quality Air quality Hazardous Waste Water Quality		342-1265 342-1206 342-1354 342-1234
Mayor-President's Office (Baton Rouge)		389-3100
Police (Baton Rouge)		911
Red Cross		926-4534
School Board		926-2790
Sheriff (Scotlandville)	•	778-0700
Weather Service		389-0308
U. S. EPA Region VI Emergency Number (	(214)	655-2222
National Response Center (	(800)	424-8802

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment IX

#### **EMERGENCY ORGANIZATION STAFFING**

Position in the Emergency Organization	<u>Name</u>	Primary Address	<u>Home</u> <u>Telephone</u>
Emergency Coordinator	T. Bramlette	530 Castle Kirk	767-0135
Alternate	On Shift Suprv*	Baton Rouge, LA 70808	
Protection Chief	J. Bourg	861 Voorhies	273-1915
Alternate	M. Higgs	Baton Rouge, LA 70815 9411 Sagefield Dr. Baton Rouge, LA 70818	261-3781
Service Chief	J. Richards	15541 Malvern Hill	295-3959
Alternate	J. Hayes	Baton Rouge, LA 1134 Trammel Baton Rouge, La	275-6187
Transportation Chief	J. Richardson	4529 Little Farms	654-8156
Alternate	J. Arbuthnot	Zachary, LA 17218 Sharpsburg Baton Rouge, LA	292-2927
Contract Coordinator	R. Hays	13574 Minou Avenue	296-5515
Alternate	P. Kimble	Baton Rouge, LA 13211 Camelot Baton Rouge, LA	275-7559
Personnel Chief	T. Eastman	10914 Maybell Ct	292-0735
Alternate	E. Chevalier	Baton Rouge, LA 8519 Scarlett Baton Rouge, LA	923-3963
Communications Chief	J. Cope	3922 Emily	749-2671
Alternate	P. Bevars	Port Allen, LA 3232 Richmond Baton Rouge, LA	291-0159
Public Relations Chief	M. Higgs	9411 Sagefield	261-3781
Alternate	J. Bourg	Baton Rouge, LA 861 Voorhies Baton Rouge, LA	273-1915
Insurance Department	L. Moroz J. Burns	One Rollins Plaza Wilmington, DE 19899	479-2700 (302)

<sup>\*</sup>Shift Supervisor is the Emergency Coordinator at night, on week-ends, or holiday until relieved.

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment IX

#### **EMERGENCY CONTACT LIST**

Name and <u>Position</u>	Home <u>Telephone</u>	Pager
Tom Bramlette Vice President/Plant Manager	767-0135	338-7164
Jerry Cope Production Scheduler	749-2671	338-7166
Jake Richards O & M Manager	295-3959	338-7166
Phil Bevars Training Supervisor	291-0159	338-8174
John Hayes Operations Supervisor	275-6187	338-8191
Doug Johnson Shift Supervisor	778-1606	
Jay Lockwood I & E Supervisor	924-7876	
Lee Savoy I & E Engineer	925-1268	
Ron Hill Day Shift Supervisor	261-8573	
Floyd Johnson Drum Pad Supervisor	261-8573	
Dwayne Garrett Shift Supervisor	769-5587	
Jeff Pittman Shift Supervisor	665-0016	
David Frashier Technical Manager		338-7168
Edward Chevalier Laboratory Manager	923-3692	338-8187
James Bourg Safety Manager	273-1915	338-7726
Jerry Richardson C.E.T. Transportation Manager	654-8156	
Jeff Pittman Fire Chief	383-5343	338-7168

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment IX

#### SAFE WORKING PRACTICES

TITLE: Specific Protective Equipment

SWP: 5101

Requirements

REV: 0

**AUTHOR: Skipper Bourg** 

**DATE:** July 7, 1989

#### **PURPOSE**

This procedure is to establish specific safety equipment requirements for jobs routinely performed at RES (LA).

#### **PROCEDURES**

Listed is a summary of required safety equipment. This personal protective equipment is in addition to the safety equipment required in our general safety rules.

1. Tanker trailer connecting/disconnecting, railcar connecting/disconnecting, line breaking, gulper truck connecting/disconnecting, steam generator or steam piping work, work on kiln guns, valves or delivery piping:

PVC gloves and boots
Monogoggles or face shield
PE Tyvek open back coat, PE Tyvek coveralls or PVC slicker suit
O.V.A.G. respirator (except for steam generator or piping)

2. Gulping of drums:

PVC gloves and boots
O.V.A.G. respirator
PE Tyvek open back coat, coveralls or PVC slicker suit
Monogoggles or face shield

3. Ash bin handling:

PVC gloves O.V.A.G. respirator

Rollins Environmental Services (LA) Inc. Contingency Plan - Attachment X

#### 4. Aspiration of drums:

PVC gloves
O.V.A.G. respirator
PE Tyvek open back coat, PE Tyvek coveralls or PVC slicker suit
Monogoggles or face shield

5. Alkyl and TiCl. Trailer connection/disconnection, operation or maintenance of equipment, valves, and guns:

PVC gloves
Safety Footwear
Flame retarded coveralls (greens)

6. Unplugging the kiln feed chute:

Aluminized kevlar suit (hood, gloves, coat, spats) Aluminized kevlar gloves or welders gloves

7. Caustic unloading or maintenance work:

PVC gloves/boots
PE Tyvek open back coat, Pe Tyvek coveralls or PVC suit
Monogoggles

8. Hydrochloric acid unloading or maintenance work:

PVC gloves/boots
PE Tyvek open back coat, Pe Tyvek coveralls or PVC slicker suit
Monogoggles
O.V.A.G. respirator

9. Ferric chloride addition:

PVC gloves/boots
PE Tyvek open back coat or PE Tyvek coveralls or PVC slicker suit
Monogoggles

#### 10. MRU unit operations or maintenance:

PVC gloves/boots
PE Tyvek open back coat or PE Tyvek coveralls or PVC slicker suit
Monogoggles

This unit is a monogoggle area for all personnel whether or not they are actually working in the area.

## 11. Routine jobs not listed above:

Hard hat Safety glasses Safety toe footwear Monogoggles carried on your person EXHIBIT H-10
SAFETY EQUIPMENT

## ATTACHMENT X

## SAFETY EQUIPMENT

	<u>Page</u>
Personal Safety and Protective Equipment	ii
Location and Type of Emergency Respirators	iii
Location of Emergency Shower/Eyewash	iv
Safe Working Practices (Memorandum - Specific Protective Equipment Requirements)	v

# PERSONAL SAFETY AND PROTECTIVE EQUIPMENT

Safety Gear Issued as Required in General Safety Rules:

Hard Hat Steel-toed Shoes Glasses Monogoggles

Personal Protective Equipment\* \* (Issued to individuals or in warehouse)

PVC Gloves and Boots
Monogoggles or Face shield
PC Tyvek Open Back Coat or Coveralls
PVC Rain Suit
O.V.A.G. Respirator
Flame Retardant Coveralls (Greens)
Aluminized Kevlar Suit (Hood, Gloves, Coat, Spats)
Aluminized Kevlar Gloves
Welders Gloves

\*\*Note - The attached memorandum provides a summary of <u>required</u> safety for specific routine jobs.

# LOCATION AND TYPE OF EMERGENCY RESPIRATORS

<u>Location</u>	Type
West Lab Door	Bottle/resuscitator
Incinerator Control Room	SCBA
Incinerator Control Room	SCBA
Incinerator Control Room	SCBA
Incinerator Control Room	SCBA
Incinerator Control Room	SCBA
Incinerator Control Room	Bottle/SCBA
Incinerator Control Room	Bottle/SCBA
Warehouse	SCBA
Warehouse/Recharge Bank	SCBA

## LOCATION OF EMERGENCY SHOWER/EYEWASH

<u>Item</u>	Location
1	Former Tank Farm - North
2	Former Tank Farm - South
3	Caustic Unloading
4	Caustic Tanks, West
5.	Southeast Corner of Kiln Storage Pad III (Drum Storage)
6.	Southeast Corner of Kiln Storage Pad IV (Drum Storage)
7.	Rear of Main Pad V (Drum Storage)
8.	At South wall of Repack Facility VIII (Drum Storage)
9.	At West Wall of Repack Facility VIII (Drum Storage)
10.	Rail Car (2)
11.	East of Incinerator Control Room
12.	ASB3 - Closed; not removed
13.	ASB2
14.	Laboratory
15.	Truck Sample Rack
16.	001 Outfall and Acid Storage, South
17.	Direct Burn Pad near Incinerator
18.	MRU (2)
19.	North Mix Building
20.	South Mix Building
21.	Kiln Feed Pad
22.	
23.	<b>B</b>
24.	Truck Sample Rack
25.	New Tank Farm, North
26.	New Tank Farm, South
27.	Behind Drivers Room near Laboratory
28.	Maintenance Shop - Portable
29.	East of Incinerator Control Room
30.	Behind Warehouse

ATTACHMENT I
PERSONNEL TRAINING PLAN

#### ATTACHMENT I

## PERSONNEL TRAINING PLAN

## Table of Contents

Table of Conte	nts	1-5-1
Introduction		1-5-2
·	List of Exhibits	
Exhibit 1-5-1	Master Training Record of All Plant Procedures	1-5-3
Exhibit 1-5-2	Training Forms for Each Job Description	1-5-7
Exhibit 1-5-3	Example Training Record	1-5-48
Exhibit 1-5-4	Current Staffing by Position	1-5-50
Exhibit 1-5-5	Position Descriptions for Key Personnel	1554

#### INTRODUCTION

RES(LA) has developed a training matrix by which personnel are given classroom and/or on the job training to ensure personnel will perform their duties in compliance with State and Federal regulations. Procedures have been developed for a wide variety of activities conducted at the plant. These procedures, which constitute an outline of the training program, are listed on the master training record for all plant personnel contained in Exhibit 1-5-1. These procedures refer to the use, inspection, maintenance, repair and replacement of emergency and monitoring equipment, automatic waste feed cutoff systems, communications and alarm systems, responses to fire and explosions and shutdown operations. The procedures are available for inspection at the RES(LA) facility.

RES(LA) conducts training sessions for the personnel as indicated in the training record for each class of personnel, given in Exhibit 1-5-2. All staff members are familiar with the safety and health policy pertaining to the contingency plan.

Personnel are given the indicated training within 6 months of the date of their employment and are required to attend an annual review session of pertinent plant procedures. Sample training forms are given in Exhibit 1-5-2 and a sample training record is given in Exhibit 1-5-3.

The current position by staffing is given in Exhibit 1-5-4. Position descriptions for key personnel are provided in Exhibit 1-5-5. The type and amount of training is indicated in the training forms for each job classification given in Exhibit 1-5-1. Documentation of training sessions is recorded and placed in the personnel file using the example forms given in Exhibits 1-5-2 and 1-5-3. Training records are kept for at least 3 years from the last date of employment.

EXHIBIT 1-5-1

MASTER TRAINING RECORD OF ALL PLANT PROCEDURES

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Eye and Pace Protection	Safety Manuger		ij	-	2-3 2-	_;	2-1-2	<u> </u>	<u>الخ</u> اح	<u>- </u>		- 7	<u></u> -1	2-1	2-7	2-3	! !					-
Hand Protection	Safoty Madager	i	1	-	3-3 2-5		2::3 1/2	<del></del>	<u>انہ</u> : ج	3		<u></u>	-7			-			~·	29.   	. <u>_</u>	 
	Manager, Technical Services	_			_					_ <u>;</u>		·—-								!		,

EXHIBIT 1-5-2
TRAINING FORMS FOR EACH JOB DESCRIPTION

EMPLOYEE NAM	E:POSITION:			<del></del>
		, (	. 1	
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-1	TELEPHONE USE & ETIQUETTE	-		
A-2	PURPOSE & USE OF KEY FORMS			
A-3	REQUIRED RECORDKEEPING & REPORTS			
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY	-	·	
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5018	PLANT ORGANIZATION			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS	<del> </del>		
				<del></del>
		1		

EMPLOYEE NAM	E:POSITION			
PROCEDURE	DECENTARY OF	1007		
NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY	·		
P-102	ENVIRONMENTAL POLICY			
SWP-1090	STACK MONITORING			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5018	PLANT ORGANIZATION			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028_	BOMB THREATS			· 
			,	
			,	

EMPLOYEE NAM	E: POSITION:_			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1000 -	GENERAL INCINERATOR OPERATION			
SWP-1004	DAILY INCINERATOR INSPECTION			
SWP-1010	CONTROL ROOM MANNING	-		
SWP-1083	DAILY TANK FIELD INSPECTION			<u> </u>
SWP-1090	STACK MONITORING			
SWP-1100	WATER TREATMENT SYSTEM			<del></del> -
SWP-1120	SURFACE IMPOUNDMENT INSPECTION			<del></del>
SWP-1130	GENERAL PLANT INSPECTION			·
SWP-1200	MATERIAL DISPATCH PROCEDURE			·
SWP-1201	GENERAL LANDFILL OPERATION			
SWP-1207	LANDFILL INSPECTION CONTAINER AREAS ARRANGEMENT			
SWP-1300/ 1301	AND INSPECTION			
SWP-1303	ODOR INSPECTION OUTSIDE PLANT			
SWP-1304	PLANT INTERIOR & PERIMETER CHECKS			
SWP-1305	LEACHATE COLLECTION SYSTEM INSPECT.			
SWP-1307	INSPECTION SCHEDULE AND LOG			<u> </u>
SWP-1400	WELL WATER PUMP AND SYSTEM			
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM TRIANGULATED GRID AIR			
SWP-4010	MONITORING SYSTEM			

#### PAGE 2 - TRAINING RECORD - TG#3

EMPLOYEE NAM	AE: POSITION	·		
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM		_	
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT		F	
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			
MISC.	PRINCIPLES OF COMBUSTION - SELF STUDY PROGRAM			

EMPLOYEE NAM	E:POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1000	GENERAL INCINERATOR OPERATION			
SWP-1001	INCINERATOR START-UP PERMISSIVES			
SWP-1002	INCINERATOR PRE-START-UP CHECKOUT			
SWP-1003	DIRECT BURN OPERATION TRUCKS		<u> </u>	
SWP-1004	DAILY INCINERATOR INSPECTION			
SWP-1005	SHUTDOWN SYSTEMS TESTING			
SWP-1006	DIRECT BURN OPERATION-RAILCARS			
SWP-1007	INCINERATOR MONITORING CHECKLIST			
SWP-1009	INCINERATOR EFFICIENCY SAFEGUARDS			
SWP-1010	CONTROL ROOM MANNING			
SWP-1020	LODDBY/AFTERBURNER OPERATION			
SWP-1040	TOX OPERATION			
SWP-1045	VENT BURNER OPERATION			
SWP-1046	EDUCTOR OPERATION			
SWP-1050	KILN OPERATION			
SWP-1060	QUENCH SCRUBBER OPERATION			
SWP-1061	CAUSTIC UNLOADING			
SWP-1070	IWS SYSTEM OPERATION			

EMPLOYEE NAME: POSITION:				
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-1080	TANK FARM NITROGEN PAD SYSTEM			
SWP-1081	CARBON ADSORPTION	<u> </u>		<u> </u>
SWP-1082	TANK TRUCK UNLOADING			
SWP-1083	DAILY TANK FIELD INSPECTION			
SWP-1084	LODDBY FEED PUMP OPERATION			
SWP-1085	TANK FARM GENERAL OPERATION			
SWP-1086	TANK FARM TRANSFER & RECIRCULATION			
SWP-1087	TOX FEED PUMP OPERATION			
SWP-1090	STACK MONITORING			
SWP-1100	WATER TREATMENT SYSTEM			
SWP-1120	SURFACE IMPOUNDMENT INSPECTION			
SWP-1200	MATERIAL DISPATCH PROCEDURE		•	
SWP-1300/ 1301	CONTAINER AREAS ARRANGEMENT AND INSPECTION	•		
SWP-1303	ODOR INSPECTION OUTSIDE PLANT			
SWP-1304	PLANT INTERIOR & PERIMETER CHECKS		_	
SWP-1305	LEACHATE COLLECTION SYSTEM INSPECT.			
SWP-1350	CONTAINER MANAGEMENT			
SWP-1400	WELL WATER PUMP AND SYSTEM			
SWP-1401	FORKLIFT OPERATION			
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			

PAGE 3 - TRAINING RECORD - TG#4

EMPLOYEE NAM	E: POSITION	POSITION:		
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION	·		
SWP-5010	CONTINGENCY PLAN RESPONSE			ļ.
SWP-5011	EXPLOSION METER OPERATION			<u> </u>
SWP-5012	ENTRY PROCEDURE-VESSELS & CONFINED SPACES			
SWP-5013	FIRE FIGHTING		<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING			
SWP-5024	INCIDENT REPORTS		,	
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			
MISC.	PRINCIPLES OF COMBUSTION - SELF STUDY PROGRAM			

EMPLOTEE NAME: POSITION:				
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1061	CAUSTIC UNLOADING			
SWP-1080	TANK FARM NITROGEN PAD SYSTEM			
SWP-1081	CARBON ADSORPTION			
SWP-1082	TANK TRUCK UNLOADING			
SWP-1083	DAILY TANK FIELD INSPECTION			
SWP-1085	TANK FARM GENERAL OPERATION			
SWP-1200	MATERIAL DISPATCH PROCEDURE			
SWP-1201 SWP-1300/ 1301	GENERAL LANDFILL OPERATION CONTAINER AREAS ARRANGEMENT AND INSPECTION			-
SWP-1350	CONTAINER MANAGEMENT			
SWP-1351	CONTAINER PROCESS-DIRECT LANDFILL			
SWP-1352	CONTAINER PROCESSING-S&E			
SWP-1353/ 4009	DRUM GULPING/FIELD COMPATIBILITY CHECK			
SWP-1354	CONTAINER REPACKAGING			
SWP-1355	LAB PAK PROCESSING			· <del> </del>
SWP-1400	WELL WATER PUMP AND SYSTEM			
SWP-1401	FORKLIFT OPERATION			
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM	ļ		

EMPLOYEE NAME: PO		POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989	
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM				
SWP-4012	SPILL NOTIFICATION REQUIREMENTS				
SWP-5000	GENERAL PLANT SAFETY RULES				
SWP-5001	WASTE SAFETY SHEETS				
SWP-5004	HOT WORK PERMIT				
SWP-5005	BLOCKOUT PROCEDURE				
SWP-5006	FIRE PUMP OPERATION				
SWP-5010	CONTINGENCY PLAN RESPONSE			·	
SWP-5013	FIRE FIGHTING			<u></u>	
SWP-5015	RESPIRATORY PROTECTION PROGRAM				
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			· 	
SWP-5018	PLANT ORGANIZATION				
SWP-5023	LINE BREAKING				
SWP-5024	INCIDENT REPORTS				
SWP-5025	APPROVED SMOKING AREAS				
SWP-5028	BOMB THREATS				
SWP-5029	ODOR & EMISSIONS ALERT		_		
SWP-5036	EYE AND FACE PROTECTION				
SWP-5037	HAND PROTECTION		_		
MISC.	PRINCIPLES OF COMBUSTION - SELF STUDY PROGRAM				

EMPLOYEE NAM	E:POSITION:	<del></del> -	<del></del>	
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102_	ENVIRONMENTAL POLICY	<del></del>		
SWP-1000	GENERAL INCINERATOR OPERATION			
SWP-1001	INCINERATOR START-UP PERMISSIVES			_
SWP-1002	INCINERATOR PRE-START-UP CHECKOUT			
SWP-1003	DIRECT BURN OPERATION TRUCKS			
SWP-1004	DAILY INCINERATOR INSPECTION			
SWP-1005	SHUTDOWN SYSTEMS TESTING			
SWP-1006	DIRECT BURN OPERATION-RAILCARS			
SWP-1007	INCINERATOR MONITORING CHECKLIST			
SWP-1009	INCINERATOR EFFICIENCY SAFEGUARDS			
SWP-1010	CONTROL ROOM MANNING			
SWP-1020	LODDBY/AFTERBURNER OPERATION			_
SWP-1040	TOX OPERATION			
SWP-1045	VENT BURNER OPERATION			
SWP-1046	EDUCTOR OPERATION			
SWP-1050	KILN OPERATION			
SWP-1060	QUENCH SCRUBBER OPERATION			
SWP-1061	CAUSTIC UNLOADING			
SWP-1070	IWS SYSTEM OPERATION		-	
SWP-1084	LODDBY FEED PUMP OPERATION			

PAGE 2 - TRAINING RECORD - TG#6

PROCEDURE NUMBER	DESCRIPTION	1987	1988	1985
SWP-1087	TOX FEED PUMP OPERATION			
SWP-1090	STACK MONITORING			
SWP-1200	MATERIAL DISPATCH PROCEDURE			
SWP-1400	WELL WATER PUMP AND SYSTEM			
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM	-		
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION	-		
SWP-5023	LINE BREAKING		}	
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			

#### PAGE 3 - TRAINING RECORD - TG#6

EMPLOYEE NAME:		POSITION:_			
PROCEDURE NUMBER	DESCRIPTION		1987	1988	1989
MISC.	PRINCIPLES OF COMBUSTION - SELF STUDY PROGRAM	-			
			·		

EMPLOYEE NA	ME: POSITION	POSITION:		
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
<u>A+4</u>	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1000	GENERAL INCINERATOR OPERATION			
SWP-1004	DAILY INCINERATOR INSPECTION			
SWP-1006	DIRECT BURN OPERATION-RAILCARS			
SWP-1010	CONTROL ROOM MANNING			
SWP-1046	EDUCTOR OPERATION			
SWP-1050	KILN OPERATION			
SWP-1061	CAUSTIC UNLOADING			
SWP-1080	TANK FARM NITROGEN PAD SYSTEM		,	
SWP-1081	CARBON ADSORPTION			
SWP-1082	TANK TRUCK UNLOADING			
SWP-1083	DAILY TANK FIELD INSPECTION			
SWP-1084	LODDBY FEED PUMP OPERATION			
SWP-1085	TANK FARM GENERAL OPERATION			
SWP-1086	TANK FARM TRANSFER & RECIRCULATION			
SWP-1087	TOX FEED PUMP OPERATION			
SWP-1090	STACK MONITORING			
SWP-1100	WATER TREATMENT SYSTEM			
SWP-1120	SURFACE IMPOUNDMENT INSPECTION			_
SWP-1200	MATERIAL DISPATCH PROCEDURE		+	

PAGE 2 - TRAINING RECORD - TG#7

PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-1205	LEACHATE COLLECTION & TREATMENT			
SWP-1400	WELL WATER PUMP AND SYSTEM			
SWP-1401	FORKLIFT OPERATION			
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM	<del></del>		
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5011	EXPLOSION METER OPERATION			
SWP-5012	ENTRY PROCEDURE-VESSELS & CONFINED SPACES			
SWP-5013	FIRE FIGHTING			<u> </u>
SWP-5015	RESPIRATORY PROTECTION PROGRAM			<i>,</i>
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			<del></del> .
SWP-5036	EYE AND FACE PROTECTION			

PAGE 3 - TRAINING RECORD - TG#7

EMPLOYEE NAM	E: POSIT	TION:		<del></del>
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-5037	HAND PROTECTION			
MISC.	PRINCIPLES OF COMBUSTION - SELF STUDY PROGRAM	*		

EMPLOYEE NAME: POSITION:				
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1061	CAUSTIC UNLOADING			
SWP-1080	TANK FARM NITROGEN PAD SYSTEM			
SWP-1081	CARBON ADSORPTION			
SWP-1082	TANK TRUCK UNLOADING			
SWP-1083	DAILY TANK FIELD INSPECTION			
SWP-1084	LODDBY FEED PUMP OPERATION			
SWP-1085	TANK FARM GENERAL OPERATION			······································
SWP-1086	TANK FARM TRANSFER & RECIRCULATION			
SWP-1087	TOX FEED PUMP OPERATION			
SWP-1090	STACK MONITORING		_	
SWP-1100	WATER TREATMENT SYSTEM			
SWP-1120	SURFACE IMPOUNDMENT INSPECTION			
SWP-1200	MATERIAL DISPATCH PROCEDURE			
SWP-1201	GENERAL LANDFILL OPERATION			
SWP-1204	LANDFILL RUN ON/RUN OFF CONTROLS			
SWP-1205	LEACHATE COLLECTION & TREATMENT			
SWP-1305	LEACHATE COLLECTION SYSTEM INSPECT.			
SWP-1400	WELL WATER PUMP AND SYSTEM			
SWP-1401	FORKLIFT OPERATION			

PAGE 2 - TRAINING RECORD - TG#8

EMPLOYEE NAM	E:		<del></del>	
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM TRIANGULATED GRID AIR	· -		
SWP-4010	MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5011	EXPLOSION METER OPERATION			
SWP-5012	ENTRY PROCEDURE-VESSELS & CONFINED SPACES			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			
MISC.	PRINCIPLES OF COMBUSTION - SELF STUDY PROGRAM		-	

EMPLOYEE NAME: POSITION:			<del></del>	
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1000	GENERAL INCINERATOR OPERATION			·
SWP-1046	EDUCTOR OPERATION			
SWP-1050	KILN OPERATION			
SWP-1061	CAUSTIC UNLOADING			
SWP-1080	TANK FARM NITROGEN PAD SYSTEM			
SWP-1081	CARBON ADSORPTION			
SWP-1082	TANK TRUCK UNLOADING			<u></u>
SWP-1083	DAILY TANK FIELD INSPECTION			
SWP-1084	LODDBY FEED PUMP OPERATION			. <u> </u>
SWP-1085	TANK FARM GENERAL OPERATION			
SWP-1086	TANK FARM TRANSFER & RECIRCULATION			
SWP-1087	TOX FEED PUMP OPERATION			
SWP-1200	MATERIAL DISPATCH PROCEDURE			
SWP-1205	LEACHATE COLLECTION & TREATMENT			
SWP-1350	CONTAINER MANAGEMENT			
SWP-1351	CONTAINER PROCESS-DIRECT LANDFILL			
SWP-1352	CONTAINER PROCESSING-S&E			
SWP-1353/ 4009	DRUM GULPING/FIELD COMPATIBILITY CHECK			
SWP-1354	CONTAINER REPACKAGING			

PAGE 2 - TRAINING RECORD - TG#9

EMPLOYEE NAM	iE:POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-1401	FORKLIFT OPERATION			
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM TRIANGULATED GRID AIR		<u> </u>	
SWP-4010	MONITORING SYSTEM		<u> </u>	
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			<u> </u>
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE	l		
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE	·		
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			

EMPLOYEE NAME: POSITION:				
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1000	GENERAL INCINERATOR OPERATION			
SWP-1061	CAUSTIC UNLOADING			
SWP-1200 .	MATERIAL DISPATCH PROCEDURE			
SWP-1201	GENERAL LANDFILL OPERATION			! 
SWP-1202	GRID PLOTTING SYSTEM			
SWP-1203	SEG. OF IMCOMPAT. WASTES-LANDFILL			
SWP-1204	LANDFILL RUN ON/RUN OFF CONTROLS			
SWP-1205	LEACHATE COLLECTION & TREATMENT			
SWP-1206	LANDFILL ODOR CONTROL-SPEC.HANDLING			· · · · · · · · · · · · · · · · · · ·
SWP-1207	LANDFILL INSPECTION			
SWP-1250	MIXING FACILITY OPERATION			
SWP-1251	ODOR CONTROL-MIXED MATERIALS			
SWP-1252	DRUM CRUSHING			
SWP-1253	DRUM PROCESSING-MIXING FACILITY			
SWP-1305	LEACHATE COLLECTION SYSTEM INSPECT.	•		
SWP-1351	CONTAINER PROCESS-DIRECT LANDFILL			
SWP-1352	CONTAINER PROCESSING-S&E			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			

PAGE 2 - TRAINING RECORD - TG#10

EMPLOYEE NAME: POSITION:		·	
DESCRIPTION	1987	1988	1989
GENERAL PLANT SAFETY RULES			
WASTE SAFETY SHEETS			
ELECTRICAL LOCKOUT PROCEDURE			
HOT WORK PERMIT			
BLOCKOUT PROCEDURE			
FIRE PUMP OPERATION			<u>.</u> .
CONTINGENCY PLAN RESPONSE			
FIRE FIGHTING		,	
RESPIRATORY PROTECTION PROGRAM			
CLEAN/DIRTY CHANGEHOUSE SYSTEM			
PLANT ORGANIZATION			
INCIDENT REPORTS			
APPROVED SMOKING AREAS			
BOMB THREATS			
ODOR & EMISSIONS ALERT			
EYE AND FACE PROTECTION			
HAND PROTECTION			
	DESCRIPTION  GENERAL PLANT SAFETY RULES  WASTE SAFETY SHEETS  ELECTRICAL LOCKOUT PROCEDURE  HOT WORK PERMIT  BLOCKOUT PROCEDURE  FIRE PUMP OPERATION  CONTINGENCY PLAN RESPONSE  FIRE FIGHTING  RESPIRATORY PROTECTION PROGRAM  CLEAN/DIRTY CHANGEHOUSE SYSTEM  PLANT ORGANIZATION  INCIDENT REPORTS  APPROVED SMOKING AREAS  BOMB THREATS  ODOR & EMISSIONS ALERT  EYE AND FACE PROTECTION	DESCRIPTION 1987  GENERAL PLANT SAFETY RULES  WASTE SAFETY SHEETS  ELECTRICAL LOCKOUT PROCEDURE  HOT WORK PERMIT  BLOCKOUT PROCEDURE  FIRE PUMP OPERATION  CONTINGENCY PLAN RESPONSE  FIRE FIGHTING  RESPIRATORY PROTECTION PROGRAM  CLEAN/DIRTY CHANGEHOUSE SYSTEM  PLANT ORGANIZATION  INCIDENT REPORTS  APPROVED SMOKING AREAS  BOMB THREATS  ODOR & EMISSIONS ALERT  EYE AND FACE PROTECTION	DESCRIPTION 1987 1988  GENERAL PLANT SAFETY RULES  WASTE SAFETY SHEETS  ELECTRICAL LOCKOUT PROCEDURE  HOT WORK PERMIT  BLOCKOUT PROCEDURE  FIRE PUMP OPERATION  CONTINGENCY PLAN RESPONSE  FIRE FIGHTING  RESPIRATORY PROTECTION PROGRAM  CLEAN/DIRTY CHANGEHOUSE SYSTEM  PLANT ORGANIZATION  INCIDENT REPORTS  APPROVED SMOKING AREAS  BOMB THREATS  ODOR & EMISSIONS ALERT  EYE AND FACE PROTECTION

EMPLOYEE NAME:		POSITION:			
PROCEDURE NUMBER	DESCRIPTION		1987	1988	1989
A-4	PERSONAL CONDUCT POLICY				
P-101	SAFETY & HEALTH POLICY				
P-102	ENVIRONMENTAL POLICY				<u></u>
SWP-1200	MATERIAL DISPATCH PROCEDURE				
SWP-1201	GENERAL LANDFILL OPERATION				
SWP-1202	GRID PLOTTING SYSTEM				
SWP-1203	SEG. OF IMCOMPAT. WASTES-LANDFILI	<u>.</u>			
SWP-1204	LANDFILL RUN ON/RUN OFF CONTROLS				
SWP-1205	LEACHATE COLLECTION & TREATMENT				
SWP-1206	LANDFILL ODOR CONTROL-SPEC.HANDLI	ING	· .		
SWP-1207	LANDFILL INSPECTION				
SWP-1250	MIXING FACILITY OPERATION				· · · · · ·
SWP-1251	ODOR CONTROL-MIXED MATERIALS			-	
SWP-1252	DRUM CRUSHING				<u>.</u>
SWP-1253	DRUM PROCESSING-MIXING FACILITY				
SWP-1305	LEACHATE COLLECTION SYSTEM INSPEC	ET.			<u>.</u>
SWP-1401	FORKLIFT OPERATION				
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM				
SWP-4012	SPILL NOTIFICATION REQUIREMENTS				
SWP-5000	GENERAL PLANT SAFETY RULES	_			
SWP-5001	WASTE SAFETY SHEETS				
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE				,

PAGE 2 - TRAINING RECORD - TG#11

EMPLOYEE NAI	APLOYEE NAME: POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			-
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			· · · · · · · · · · · · · · · · · · ·
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			· · · · · · · · · · · · · · · · · · ·
JUJ/	THE THOUSEN	<u> </u>		

EMPLOYEE NAME: POSITION		<u> </u>		
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1005	SHUTDOWN SYSTEMS TESTING			
SWP-1080	TANK FARM NITROGEN PAD SYSTEM			
SWP-1081	CARBON ADSORPTION			
SWP-1085	TANK FARM GENERAL OPERATION		i 	
SWP-1090	STACK MONITORING			
SWP-1100	WATER TREATMENT SYSTEM			
SWP-1200	MATERIAL DISPATCH PROCEDURE			
SWP-1201	GENERAL LANDFILL OPERATION			
SWP-1250	MIXING FACILITY OPERATION			
SWP-1350	CONTAINER MANAGEMENT	·		. <u>.</u>
SWP-1400	WELL WATER PUMP AND SYSTEM			
SWP-1401	FORKLIFT OPERATION			
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			· · · · - <del>-</del>
SWP-5004	HOT WORK PERMIT			

PAGE 2 - TRAINING RECORD - TG#12

EMPLOYEE NAME: POSITION:				
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5011 SWP-5012	EXPLOSION METER OPERATION ENTRY PROCEDURE-VESSELS & CONFINED SPACES			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			<u></u>
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING.			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5032	SCAFFOLD SAFETY			·
SWP-5036	EYE AND FACE PROTECTION			<del></del>
SWP-5037	HAND PROTECTION			

EMPLOYEE NAM	E: POSITION	POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989	
A-4	PERSONAL CONDUCT POLICY				
P-101	SAFETY & HEALTH POLICY				
P-102	ENVIRONMENTAL POLICY				
SWP-1200	MATERIAL DISPATCH PROCEDURE				
SWP-1401	FORKLIFT OPERATION TRIANGULATED GRID AIR MONITORING SYSTEM				
SWP-4010 SWP-4012	SPILL NOTIFICATION REQUIREMENTS				
SWP-5000	GENERAL PLANT SAFETY RULES				
SWP-5001	WASTE SAFETY SHEETS				
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE				
SWP-5004	HOT WORK PERMIT				
SWP-5005	BLOCKOUT PROCEDURE				
SWP-5006	FIRE PUMP OPERATION				
SWP-5010	CONTINGENCY PLAN RESPONSE				
SWP-5011	EXPLOSION METER OPERATION				
SWP-5012	ENTRY PROCEDURE-VESSELS & CONFINED SPACES				
SWP-5013	FIRE FIGHTING				
SWP-5015	RESPIRATORY PROTECTION PROGRAM				
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM				
SWP-5018	PLANT ORGANIZATION				
SWP-5023	LINE BREAKING				
SWP-5024	INCIDENT REPORTS				

PAGE 2 - TRAINING RECORD - TG#13

EMPLOYEE NAM	E:POSI	ITION:		<del></del>
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			<u> </u>
SWP-5032	SCAFFOLD SAFETY			-
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION	<u></u>		

EMPLOYEE NAM	E:POSITION	:		
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1070	IWS SYSTEM OPERATION			
SWP-1200	MATERIAL DISPATCH PROCEDURE			
SWP-1401 SWP-4010	FORKLIFT OPERATION TRIANGULATED GRID AIR MONITORING SYSTEM			-
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			
SWP-5004	HOT WORK PERMIT			· · · · <u>-</u> ·
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5011	EXPLOSION METER OPERATION			
SWP-5012	ENTRY PROCEDURE-VESSELS & CONFINED SPACES			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING			·····

PAGE 2 - TRAINING RECORD - TG#14

EMPLUILE NAM	EMPLUIEE NAME:		POSITION:		
PROCEDURE NUMBER	DESCRIPTION		1987	1988	1989
SWP-5024	INCIDENT REPORTS				<u>.</u>
SWP-5025	APPROVED SMOKING AREAS				
SWP-5028	BOMB THREATS				·
SWP-5029	ODOR & EMISSIONS ALERT				
SWP-5032	SCAFFOLD SAFETY				
SWP-5036	EYE AND FACE PROTECTION	Ť.			··
SWP-5037	HAND PROTECTION		!	<u>.</u>	

EMPLOYEE NAM	E:POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1070	IWS SYSTEM OPERATION			
SWP-1080	TANK FARM NITROGEN PAD SYSTEM			,
SWP-1200	MATERIAL DISPATCH PROCEDURE		•	·
SWP-1401	FORKLIFT OPERATION		-	
SWP-1405	AIR COMPRESSORS & AIR DRYER SYSTEM			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			·
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5011	EXPLOSION METER OPERATION			
SWP-5012	ENTRY PROCEDURE-VESSELS & CONFINED SPACES			
SWP-5013	FIRE FIGHTING			··· ··
SWP-5015	RESPIRATORY PROTECTION PROGRAM		Ì	
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			

PAGE 2 - TRAINING RECORD - #15

EMPLOYEE NAME:		ITION:		<del></del>
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5032	SCAFFOLD SAFETY			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			

EMPLOYEE NAM	E:POSITION:	ITION:		
PROCEDURE NUMBER	DESCRIPTION	1987	1988_	1989
<u>A-4</u>	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			
SWP-1401	FORKLIFT OPERATION TRIANGULATED GRID AIR			
SWP-4010	MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5006	FIRE PUMP OPERATION			·
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5032	SCAFFOLD SAFETY			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			

MPLOYEE NAME: POSITION:				
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY		_	
SWP-1401 SWP-4010	FORKLIFT OPERATION TRIANGULATED GRID AIR MONITORING SYSTEM			· · ·
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES	•.		
SWP-5001	WASTE SAFETY SHEETS			
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			

EMPLOYEE NAI	ME:POSITION	POSITION:		
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
<u>A</u> -4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY TRIANGULATED GRID AIR			
SWP-4010	MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			<del></del>
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			<del> </del>

EMPLOYEE NAM	EMPLOYEE NAME: POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
- <u>A-4</u>	PERSONAL CONDUCT POLICY			
- P-101	SAFETY & HEALTH POLICY			
- P-102	ENVIRONMENTAL POLICY			
- <u>SWP-1081</u>	CARBON ADSORPTION			·
- <u>SWP-1090</u>	STACK MONITORING			
SWP-1100	WATER TREATMENT SYSTEM			
SWP-1120	SURFACE IMPOUNDMENT INSPECTION			
SWP-1200	MATERIAL DISPATCH PROCEDURE			
SWP-1304	PLANT INTERIOR & PERIMETER CHECKS			
SWP-1400	WELL WATER PUMP AND SYSTEM TRIANGULATED GRID AIR			
- SWP-4010	MONITORING SYSTEM	-		
- SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
- SWP-5000	GENERAL PLANT SAFETY RULES			
- SWP-5001	WASTE SAFETY SHEETS			
- SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			<del> </del>
SWP-5018	PLANT ORGANIZATION			
- SWP-5024	INCIDENT REPORTS			
- SWP-5025	APPROVED SMOKING AREAS			
- SWP-5028	BOMB THREATS			
- SWP-5029	ODOR & EMISSIONS ALERT			
- <u>SWP-5036</u>	EYE AND FACE PROTECTION			
_ SWP-5037	HAND PROTECTION	·	-	· · · · · · · · · · · · · · · · · · ·

EMPLOYEE NAME: POSI		[ON:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989	
A-4	PERSONAL CONDUCT POLICY				
P-101	SAFETY & HEALTH POLICY				
P-102	ENVIRONMENTAL POLICY				
SWP-1081	CARBON ADSORPTION				
SWP-1090	STACK MONITORING				
SWP-1100	WATER TREATMENT SYSTEM				
SWP-1120	SURFACE IMPOUNDMENT INSPECTION				
SWP-1200	MATERIAL DISPATCH PROCEDURE	٠,			
SWP-1304	PLANT INTERIOR & PERIMETER CHECKS			-	
SWP-1400	WELL WATER PUMP AND SYSTEM				
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM				
SWP-4012	SPILL NOTIFICATION REQUIREMENTS		-		
SWP-5000	GENERAL PLANT SAFETY RULES				
SWP-5001	WASTE SAFETY SHEETS			<u>.</u>	
SWP-5010_	CONTINGENCY PLAN RESPONSE				
SWP-5015	RESPIRATORY PROTECTION PROGRAM				
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM				
SWP-5018	PLANT ORGANIZATION				
SWP-5024	INCIDENT REPORTS				
SWP-5025	APPROVED SMOKING AREAS				
SWP-5028	BOMB THREATS				
SWP-5029	ODOR & EMISSIONS ALERT				

## PAGE 2 - TRAINING RECORD - TG#20

EMPLOYEE NAM	E:	POSITION: _			
PROCEDURE NUMBER	DESCRIPTION		1987	1988	1989
SWP-5036	EYE AND FACE PROTECTION				
SWP-5037	HAND PROTECTION				

EMPLOYEE NAM	E:POSITIO	N:	<del> </del>	
PROCEDURE				
NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY		<del></del>	
P-101	SAFETY & HEALTH POLICY		<u> </u>	
P-102	ENVIRONMENTAL POLICY			
SWP-4010	TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			
SWP-5001	WASTE SAFETY SHEETS			
SWP-5003	ELECTRICAL LOCKOUT PROCEDURE			
SWP-5004	HOT WORK PERMIT			
SWP-5005	BLOCKOUT PROCEDURE			•
SWP-5006	FIRE PUMP OPERATION			
SWP-5010	CONTINGENCY PLAN RESPONSE			
SWP-5012	ENTRY PROCEDURE-VESSELS & CONFINED SPACES			
SWP-5013	FIRE FIGHTING			
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			
SWP-5023	LINE BREAKING			
SWP-5024	INCIDENT REPORTS			
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			

## PAGE 2 - TRAINING RECORD - TG#21

EMPLOYEE NAME:		POSITION:			
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989	
SWP-5032	SCAFFOLD SAFETY				
SWP-5036	EYE AND FACE PROTECTION				
SWP-5037	HAND PROTECTION				

EMPLOYEE NAME: POSITION:				
PROCEDURE NUMBER	DESCRIPTION	1987	1988	1989
A-4	PERSONAL CONDUCT POLICY			
P-101	SAFETY & HEALTH POLICY			
P-102	ENVIRONMENTAL POLICY			<u>.</u>
SWP-1201	GENERAL LANDFILL OPERATION			
SWP-1202 SWP-4010	GRID PLOTTING SYSTEM TRIANGULATED GRID AIR MONITORING SYSTEM			
SWP-4012	SPILL NOTIFICATION REQUIREMENTS			
SWP-5000	GENERAL PLANT SAFETY RULES			·
SWP-5001	WASTE SAFETY SHEETS			
SWP-5010	CONTINGENCY PLAN RESPONSE		.	
SWP-5015	RESPIRATORY PROTECTION PROGRAM			
SWP-5016	CLEAN/DIRTY CHANGEHOUSE SYSTEM			
SWP-5018	PLANT ORGANIZATION			<del></del>
SWP-5024	INCIDENT REPORTS			<u> </u>
SWP-5025	APPROVED SMOKING AREAS			
SWP-5028	BOMB THREATS			
SWP-5029	ODOR & EMISSIONS ALERT			
SWP-5036	EYE AND FACE PROTECTION			
SWP-5037	HAND PROTECTION			

EXHIBIT 1-5-3
EXAMPLE TRAINING RECORD

I,	, have received training
on the following subjects:	
	<u> </u>
I understand that a copy of this training	record will be placed in my
personnel training file.	
·	
EMPLOYEE	DATE
JOB TITLE	
rustaia. Durantial 1	
Training Provided by:	
NAME .	
TITLE	•

EXHIBIT 1-5-5
Position Descriptions for Key Personnel

# EXHIBIT 1-5-4 CURRENT STAFFING BY POSITIONS

## CURRENT STAFFING BY POSITION

## ROLLINS ENVIRONMENTAL SERVICES (LA) INC.

	TRAINING	
POSITION	GROUP	NAME
Vice President	2	T. Bramlette
Executive Secretary	1	P. Britt
Receptionist	1	D. Harrington
Manager, Technical Services	2	W. Clemmons
Operations Manager	3	J. Richards
Maintenance Manager	12 ·	H. Kolterman
Lab Director	2	M. Cristanetti
Production Scheduler	2	J. Cope
Vice President, Engineering	2	D. Hagerman
Sales Manager	2 '	N. Daeubler
Controller	2	T. Eastman
Environmental Affairs Manager	2	M. Higgs
Environmental/Legal Secretary	1	D. Soto
Safety & Industrial Hygiene Manager	2	S. Varnado
Counsel	2	J. Penton
Accounting Secretary	1	Open
Plant Accountant	1	M. Mizell
Accounts Payable Clerk	1	L. Sinclair
Accounts Receivable Clerk	1	J. Hood
Purchasing Agent	1	L. Danos
Billing/Purchasing Clerk	1	S. Campbell
Collections Clerk	1	K. Guilbeau
Engineering Secretary	1	J. Doran
Civil/Design Engineer	21	M. Chaney
Design/Draftsman	22	Open
Electrical/Instrumentation Engineer	21 -	L. Savoy
Project Manager/Civil Engineer	21	J. Arbuthnot
Construction Manager	21	R. Hays
Contract Administrator	21.	Open
Chief Field Engineer	21	J. Cavanaugh
Plant Engineer/PM	21	Open
Engineering Specialist	21	Open
Materials Management Supervisor	12	J. Pittman
Storeroom Helper	17	W. Tillman
Instrument Technicians	15	R. Gros
This cramence reconstructions		D. Shilling
		J. Sturgis
Electrician	14	J. Morris
Maintenance Mechanics	13	J. Boone
induit condition in the internal in the internal	~~	M. Brown
		R. Courtade
		J. Davis
		R. Dunaway
		B. Lovless
		J. Wade
		0

POSITION	TRAINING GROUP	NAME
Painter/Sandblaster	16	D. Muse L. Whitehead
Laborers	16	B. Adams R. Dickey C. LaCoste W. Lavergne Open Open
Janitors	18	A. Henderson C. Kimbel
Operations Secretary Shift Supervisors	1 4	T. Fairley D. Garrett J. Hayes D. Johnson F. Johnson
Incinerator Operators	6	J. Davis D. Dunaway E. Lalonde E. Newton
Tank Farm Treatment Operators	.7	W. Banks D. Batiste M. Griffin C. Phillips
Water System Treatment Operators	8	M. Brunson J. McGraw C. Strickland M. Voyles
Helpers	9	S. Carter R. Gardner T. Hooker P. Jones J. Kenney B. McAdams M. Miller J. Sherman J. Tate C. Washington S. Williams
Drum Pad Helpers	9	R. Ashford P. Bordelon W. Douglas D. Gandolfo W. Hawkins R. Holley H. Jack F. Reeves W. Stewart J. White

	TRAINING	
POSITION	GROUP	NAME
Inndfill Cumpurian	10	0
Landfill Supervisor	10	Open
Maintenance Planner	12	D. Woodfield
Leachate Operator	11	R. Golden
Leachate Helper	11	T. Brown
Sales Secretary	1	T. Nissen
Receptionist/Clerk Typist	1	Open
Industrial Sales Representatives	1	P. Arndt
		B. Bassett
•		D. Deshotels
	•	G. Flanagan
		R. Franchuk
		R. Graves
		S. Ward
Sales Trainee	1	Open
Inside Sales Representative	1	M. James
Transportation/File Clerk	1	M. Scott
Sales Coordinators	1	J. Begue
	•	S. Carpenter
		T. Wall
Technical Representative	1	R. Fuqua
Technical Specialist	1	G. Holden
Technical Secretary	1	P. Woodruff
Laboratory Manager	19	E. Chevalier
Special Project/QA/QC Chemist	19	R. Jackson
Instrument Chemical Gas Chrom	19	D. Sanders
QA/QC Manager	19	Open
Technician-Water	20	A. Hauskins
Technician-Metals	20	S. Wroblewski
Manifest Clerk	1	M. Watson
Physical Parameters Technicians	20	R. Asuzu
		K. Ingwersen
		E. Jarreau
		R. Kohli
Receiving Clerk	1	D. Arboneaux
Lab Pack Chemist	19	B. Keslick

Position Title:

Vice President

Reports To:

Senior Vice President

General Purpose:

Conduct marketing, plant operations, technical and supporting activities of a region in such manner as to maximize profits by producing optimum returns on the operating capital employed within the region, and to integrate the regional profit center activities with corporate whole.

# Major Responsibilities and

Results Expected:

Under the general guidance of the Senior Vice President, and within a framework consonant with corporate objectives and policies:

- 1. Formulates regional objectives, long and short range, and develops plan for the achievement of its profitable operation.
- 2. Determines work priorities and sets regional budgets to reflect the optimum commitment of the financial resources available to the region for its work.
- 3. Establishes and maintains an organization consistent with the regional objectives, including giving proper emphasis to functions to be performed within region as well as delineating responsibilities, related authorities, and internal relationships in a fashion that will integrate all regional efforts toward attaining its objective.
- 4. Carries out manpower planning and development to meet the regional requirements at all levels.
- Fosters a climate of high motivation and personal commitment.
- 6. Represents the region in all major contacts with various external groups and "publics" important in the region.
- 7. Develops and maintains standards and measures of performance adequate to keep regional units and corporate management fully aware of:
  - a. the total results of the region,
  - b. the relative efficiency of various units, and
  - obstacles and plans to overcome them.
- 8. Regularly reappraises the work and results of the region so as to reformulate its plans, redirect its efforts, and rededicate it to revised goals.

#### POSITION DESURIPTION

TITLE:

Plant Manager

LOCATION: Baton Rouge Plant

REPORTS TO: Regional Vice President

DATE:

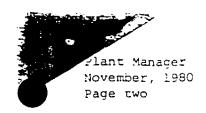
November, 1980

#### General Purpose

Establishes plant policies, procedures, controls and objectives, and directs the overall management of plant operations, maintenance, engineering, and transportation to meet profit and safety goals through utilization of plant manpower and physical facilities in a manner consistent with corporate policies and at the lowest cost consistent with regulatory requirements. Coordinates plant activities with Regional Technical, Sales, Field Services, and Safety, and delegates authority to supporting management to assure an efficient, profitable plant operation.

#### Major Responsibilities

- 1. Establishes plant policies, procedures, controls and objectives consistent with corporate guidelines. Directs implementation of such practices to minimize operating costs.
- Coordinates the execution of operating plans and schedules and resolves operating problems to assure Sales commitments are met and that plant is operating at capacity.
- Controls the quality of all plant effluents air, odor, stack emissions, water, rainwater, etc.
- 4. Ensures safety and efficiency of operations in receiving, storing and disposal of waste materials.
- 5. Establishes and monitors production and inventory reports to ensure an awareness of current operating condition status. Establishes and produces reports required for regulatory compliance. Establishes and produces reports for higher management.
- 6. Maintains cost control system that includes budget preparation, purchasing control, raw material and supplies control, inventory control, processing cost analyses, profit improvement, energy conservation, plant automation and salvage. Formally reviews the plants' financial statements to assure conformance to profit goals.
- 7. Coordinates plant personnel policies and procedures which includes hiring practices and disciplinary action. Administers salary review program for exempt employees. Administers and negotiates Union contract. Participates in labor relations activities.
- 8. Ensures that the plant has a continuing maintenance program such as lubrication preventive maintenance, work order system, coatings, scheduling, shop tools, maintenance shop, predictive maintenance, spare parts inventory, master equipment records, equipment numbering, critical equipment list, troubleshooting, corrosion analysis, vibration analysis, bearing shock pluse analysis, fiber optics analysis, shim kits, coupling alignment, burnt fault fiber and skills improvement. Ensures that maintenance scheduling meets requirements of equipment of fulfill operations demand.



- 9. Ensures plant operations and equipment installations meet all regulatory agency requirements.
- 10. Prepares monthly spending forecast and updates on weekly basis.
- 11. Prepares monthly reports which includes budget spending analysis, waste treated, capital projects, transportation, safety, exceptions, and future plans.
- 12. Directs and establishes safety program which includes training, housekeeping, accident and injury investigation, adherence of OSHA and NIOSH standards, monthly safety meeting, job hazard analyses, fire training, hazard recognition, fire system inspection, etc.
- 13. Establishes controls to monitor safety program effectiveness.
- 14. Represents the plant in dealings with customers, community and regulatory officials to promote the company's goodwill interests.
- 15. Assists in the preparation of long range plans with appropriate documentation to support recommendations for manpower, facilities, and equipment in regard to accomplishing profit objective.
- 16. Improves plant efficiency through debottlenecking, improved raw material utilization efforts, and energy conservation programs.
- 17. Secures services of contractors and directs effective utilization.
- 18. Implements operating plans, troubleshoots, and resolves operating problems in order to meet sales commitments and maintain inventory capability.
- 19. Approves design and prepares justification for new equipment/facilities.
- 20. Establishes plant manpower plan and development requirements to meet the regions' growth needs.
- 21. Assists in other projects and assignments as directed by the Regional Vice President.

#### ROLLINS ENVIRONMENTAL SERVICES (LA) INC.

#### POSITION DESCRIPTION

TITLE:

PRODUCTION SCHEDULER

DATE:

September 8, 1986

LOCATION:

Baton Rouge, Louisiana

DEPT:

Management

REPORTS TO:

Plant Manager

#### I. SUMMARY

Directs the scheduling of 250,000,000 pounds of waste material into the site and through the various disposal routes that is cost efficient, creates an available-working inventory, that will afford and abet operations to maximize their daily productivity within the established Corporate and Regulatory Agency guidelines.

#### II. ACCOUNTABILITY

- A. Must interface with Operations and Maintenance Management to determine daily productivity rates, waste handling problems and/or downtime which would effect scheduling.
- B. Must interface with Sales to determine the availability of waste streams and to dictate inventory needs and scheduling.
- C. Communicate with and assist the Technical Coordinator in scheduling and handling of problem streams.
- D. Responsible for the Daily Incinerator Burn Plan preparation and distribution.
- E. Assists and advises Operations on the internal movement of waste material to optimize storage and inventory control.

#### III. NATURE OF SCOPE

The Plant Scheduler reports directly to the Plant Manager as do:

- Operations manager Directs the effort of the Operations
   Department of the Baton Rouge facility.
- Safety & Hygiene Manager Has responsibility of the site safety and hygiene program.
- 3. Controller Directs the Accounting, Payroll, Purchasing, and Administrative functions of the Plant Controllership group.

Position Description Production Scheduler, cont'd. Page 2

- 4. Maintenance Manager Responsible for the overall Maintenance Program at the Baton Rouge facility.
- Technical Manager Directs the site Technical and Lab functions.
- 6. Secretary Provides office management/clerical duties to the Plant Manager.

The Plant Scheduler interfaces on a direct and frequent basis with the Sales Manager, Technical Manager, Technical Coordinator, and Transportation Manager, who report to the General Manager and/or Corporate Managers on a functional basis.

The Production Scheduler must also have direct and frequent contact with first line supervision to properly analyze and effect inventory needs, waste movement and scheduling.

#### A. Supervision Received:

The Plant Scheduler is free to act concerning his operation with the following exceptions:

- Final decisions related to safety and environmental regulations.
- Matters involving loss of projected revenue.
- 3. Matters involving National Sales Accounts.

#### B. Supervision Excercised:

Reporting directly to the Plant Scheduler are:

No one at this time. As the position develops, a clerk/secretary may be assigned.

#### IV. QUALIFICATIONS:

- A. A minimum of a high school degree, college degree in a Technical discipline is preferred.
- B. Good management skills to direct and control and effectively interface with applicable Operations and Sales personnel.
- C. Good first-hand working knowledge of Operations systems to evaluate and understand their needs and problems.

#### POSITION DESCRIPTION

TITLE: Manager of Health and Safety

LOCATION: Baton Rouge, Louisiana - RES (LA) INC.

REPORTS TO: Yisa Practions Plant Manager

#### I. SUMMARY

The major objective of the Manager of Health and Safety is to effectively plan and control the RES (LA) INC. Safety Programs to ensure a proper working atmosphere for minimum injuries and maximum productivity. Program development, organization, training, follow-up, inspections, and attitude development are necessary to attain the major objectives. The responsibility for implementation of the Safety Program rests ultimately with this position.

#### II. ACCOUNTABILITY

- A. Training of supervisors to conduct safety training on first aid, emergency procedures, forklift operation, fire brigade, chemical exposures and health hazards, and respiratory equipment. The intent of this phase is to qualify supervisors to be competent for the various phases of safety training required.
- B. Establish accident reporting and investigations system. This phase to include follow-up of all injuries and "near misses" investigations to ensure proper controls have been applied. This effort includes training of supervisors in conductance of accident and injury investigations.
- C. Establish program of monthly safety meetings. Train supervisors to conduct employee safety meetings. Establish format to include proper handling of safety recommendations from the employees.
- D. Establish a Job Hazard Analysis Program. Assist in determination of most critical areas to be covered. Review and approve all Job Hazard Analyses.
- E. Establish housekeeping safety standards applicable to the plants for the present situation. Establish program of inspection and follow-up, giving guidance to direct the program to the worker level.
- F. Develop a program of routine safety inspections at the plants which will include fire system, fire-fighting equipment, emergency lighting, safety showers and eyewash fountains, pressure relief devices and rupture discs, equipment alarms and interlocks, vehicles, first aid supplies, etc. Ensure that responsibility and timing are assigned.
- G. Institute "mock" OSHA inspections at each location. Train supervisors in conductance of "mock" OSHA inspections. Train supervisors in OSHA regulations.

- H. Develop an Industrial Hygiene Program at each location that includes determination of raw materials and waste materials handled at each plant with established TLV's. Assist in determination of work area concentration and worker exposure levels where TLV levels have been established.
- I. In coordination with Corporate Director of Safety and Industrial Hygiene, implement program of medical surveillance for Southern Region employees.
- J. Implement Waste Safety Data Sheet Program. Ensure WSDS form is complete for each waste stream. Ensure proper utilization of WSDS form by Transportation, Laboratory, Operations, Maintenance and Contractors.
- K. Ensure that each plant has a personnel protective equipment program, with policy and procedures for use with the procedures reviewed with all plant employees.
- L. Implement program on Hazard Recognition, Understanding and Control.
- M. Establish a safety interest (motivational) program at each location.
- N. Establish a program of industrial hygiene which includes facilities, personnel protection, and training.
- O. Establish Emergency Response plan and develop Emergency Procedures Manual with actual writing and updating as required.
- P. Development of Safety Manual. Ensure that policy, procedure, responsibility and timing are defined as a part of the format of each program.
- Q. Maintain communications with Plant Managers and advise them of known problem areas. Serve on a consulting basis for safety problems.
- R. Ensure accurate and timely records for OSHA, RCRA and Workmen's Compensation.
- S. Develop Safety Orientation for plant visitors and Safety Orientation program with checklist for new employees.
- T. Coordinate and participate in periodic plant reviews by insurance underwriter.
- U. Serve as central communicant and interface with Safety Regulatory Visitors/Inspections.
- V. Provide Loss Control Guidance to plant managers.
- W. Supervise the security function of the plant including traffic control,

personnel screening for plant entry, visitor screening for plant entry, contractor personnel, theft deterrent actions, perimeter protection integrity, and odor patrol.

- X. Submit montly reports on Safety activities.
- Y. Other projects as assigned by Vice President.

## III. OUALIFICATIONS

- A. Technical degree (B.S.)
- B. Certified as Safety Professional by exam (CSP)
- C. Five to ten years of safety experience in industrial safety

#### Environmental Affairs Officer

<u>Position Description</u>. As the on-site Environmental Officer, responsible to the Director of Environmental Affairs for overall coordination and monitoring of all compliance and permit activities at the site, and for other duties as assigned.

#### Duties Include:

- 1. Daily inspection of all plant operations for compliance with environmental regulations and permit conditions.
- Supervision of maintenance of all records as required by permits and regulations.
- 3. Responsibility and authority to cease any operation which is out of compliance with the permits or regulations, done through the Plant Manager when possible.
- 4. Daily oral reports on compliance to Director of Environmental Affiars.
- 5. Coordination and review of <u>all</u> permit and other submissions to regulatory agencies, clearing with Director of Environmental Affairs on non-routine matters. Receives copy of <u>all</u> communications from regulatory agencies.
- 6. Primary point of contact between the plant and all regulatory agencies on all compliance and permit matters.
- 7. Preparation and forwarding of a weekly report to the Director of Environmental Affairs.
- 8. Serving on a rotating audit team which will conduct detailed audits at all facilities.
- 9. Providing assistance to Field Services on regulatory matters.
- 10. Providing tours of the facility to regulatory visitors.
- 11. Primary plant contact for customer individual and team audits at the site.
- 12. Other assignments as directed.

#### POSITION DESCRIPTION

TITLE: MANAGER PROCESS ENGINEERING/TECHNICAL SERVICES

LOCATION: BATON ROUGE, LOUISIANA - RES (LA) INC.

REPORTS TO: VICE PRESIDENT - RES (LA) INC.

#### I. SUMMARY

Directs activities of the Process Engineering/Technical Services group at RES (LA) INC. Responsible for providing process and plant technical support and inputs as needed to optimize operating efficiency, productivity, and profitability, while assuring compliance with all local, state, and federal regulations governing treatment, storage, and disposal of hazardous wastes.

#### II. ACCOUNTABILITY

- A. Directs activities of a department consisting of four or more process engineers, plant engineers, or other technical disciplines.
- B. Responsible for monitoring and review of all plant operations for safe, efficient, and environmentally secure conditions.
- C. Responsible for resolving problem streams. Recommends treatment to allow handling of stream, recommends alternate disposal method, or recommends rejection.
- D. Interfaces with technical and marketing to review new and existing streams for treatability and pricing.
- E. Responsible for development and review of unit cost factors. Recommends pricing guidelines to maximize profitability.
- F. Responsible for coordinating plant process and mechanical revisions to eliminate problems and/or bottlenecks. Reviews corporate engineering projects as plant technical representative.
- G. Developes and recommends optimum operating and handling procedures. Functions as clearing house for revision of existing plant procedures and development of new procedures.
- H. Responsible for plant studies and/or investigations to improve productivity, efficiency, and environmental safeguards. Recommends and implements such approved changes.
- I. When requested provides assistance in training plant personnel in existing, revised, and new procedures.

- J. Responsible for providing technical assistance in all plant areas when needed, either when requested or on own initiative.
- K. Responsible for other functions as designated by the Vice President as needs arise.

#### III. NATURE OF SCOPE

The Manager Process Engineering/Technical Services reports to the Vice President as do:

1. Plant Manager - Responsible for all plant operations and maintenance.

Technical Manager - Directs the plant december: --

Controller - Directs the accounting, payroll, purchasing, and administrative functions of the plant.

Safety Manager - Coordinates plant safety program.

. <u>Sales Manager</u> - Direct activities of the RES (LA) Inc. marketing department.

Executive Secretary - Provides office management/clerical duties to the Vice President.

In addition to the above the Manager Process Engineering/Technical Services also interfaces on a frequent basis with corporate engineering and environmental compliance departments.

He also has periodic contact with customers on review of new streams and resolution of problems with existing streams, and with regulatory agencies on plant reviews and audits.

#### A. Supervision Received

The Manager Process Engineering/Technical Services has authority to act within the area of his responsibility and secures the prior approval of the Vice President when needed.

He may receive some guidance from appropriate corporate personnel, but will review this with the Vice President prior to taking any action if necessary as determined by the scope of his responsibilities.

#### B. Supervision Exercised

Reporting directly to the Manager Process Engineering/Technical Services are:

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- 1. Process Engineer(s) Responsible for reviewing plant operations to eliminate problems and/or improve operations, and to ensure adherence to specified operating parameters.
- Project Engineer(s) Responsible for implementing desired plant revisions and/or some repairs.

The Manager Process Engineering/Technical Services will also indirectly supervise other process engineers, project engineers, draftsmen as dictated by the organization required for implementation. This will include temporary and/or contract personnel as required.

# IV. QUALIFICATIONS

- A. A minimum of a B.S. in Chemical or Mechanical Engineering, or equivalent.
- B. A minimum of 5-10 years experience in chemical plant operations with combustion-type processes.
- C. A minimum of four years experience in chemical plant operations in a supervisory or managerial role.
- D. A good feel for plant operations, with the demonstrated ability to evaluate operating conditions and pinpoint areas to improve operations and/or-eliminate problems.
- E. A broad background or experience in varied chemical plant operations and a knowledge of proper treatment and handling methods of industrial chemical compounds and the wastes generated.
- F. Proven management skills to direct and control technical and non-technical personnel activities.

TITLE:

PROCESS/PROJECT ENGINEER (2 required)

LOCATION:

Baton Rouge, Louisiana - RES (LA) INC.

REPORTS TO:

Manager - Process Engineering/Technical Services

## I. SUMMARY

Provides plant engineering support for plant improvement, debottlenecking or problem solving investigations, plant automation, cost control and reduction, safety and industrial hygiene improvements, equipment protection, and environmental control.

# II. ACCOUNTABILITY

- A. Perform technical investigations to troubleshoot and recommend corrective action for equipment and process problems.
- B. Design, prepare specification and select equipment to satisfy project demands.
- C. Prepare cost estimates for projects suitable for capital authorization requests.
- D. Provide engineering support and coordination for plant capital projects.
- 2. Coordinate implementation of capital and plant change projects.
- F. Maintain scheduling liaison with operations to ensure smooth scheduling and minimum interruption to production. Assures timeliness of projects under his responsibility.
- G. Prepare bid tabulations and requisitions for major equipment, construction materials, and construction service for projects.
- H. Direct activities of "in-house" personnel or outside contractors to install necessary facilities to complete project.
- I. Work with plant manufacturing and technical personnel to help bring project onstream and assist in bringing project to operational completion.
- J. Ensure that all necessary utilities, permits or inspections required by Local, State, or Federal Governments are in compliance.
- K. Provide liaison between plant and Corporate Engineering on projects

undertaken at the plant site.

- L. Assures that new facilities can be efficiently maintained.
- M. Assists in start-up of new facilities.
- N. Supplies instructions for operating and maintaining new facilities. Trains or assists in training of plant personnel.
- O. Assists maintenance with problems on equipment that has been installed under his direction.
- Assures that equipment has been properly tested prior to start-up.
- Q. Standardizes equipment selection when possible to simplify spare parts requirements.
- R. Assures proper expediting of services, materials, drawings, and equipment associated with his projects.
- S. Participate in Safety Program OSHA compliance, process hazards reviews, operational readiness inspections, and adequacy of fire protection systems. Assures that new facilities meet Safety Standards. Responsible for Safety of Contractor personnel working on his projects.
- T. Performs other duties as assigned by the Manager Process Engineering/Technical Services.

#### III. NATURE OF SCOPE

The Process/Project Engineer reports to the Manager - Process Engineering/Technical Services as do:

- 1. Other Process/Project Engineers Engaged in similar activities.
- 2. <u>Design Draftsman</u> Engaged in drafting, other project support, and maintenance of landfill placement records.

In addition to the above he will interface with equipment manufacturers, plant operating personnel, corporate engineering, and sales departments.

He will also have occasional contact with customers on resolution of problem streams, and with regulatory agencies on plant reviews and audits and review of new and revised facilities.

# A. Supervision Received

He will receive guidance and support from the Manager - Process Engineering/Technical Services, and acts within the scope of his responsibilities and assignments.

He may receive some guidance from appropriate corporate personnel, but

will review this with his supervisor as necessary.

# 3. Supervision Exercised

Normally none, but may supervise other engineers and/or draftsmen while functioning as a group leader on larger studies or projects.

# IV. QUALIFICATIONS

- A. A. B.S. degree in the appropriate engineering discipline, or equivalent.
- B. At lease three (3) years experience in industrial chemical plant operations, with at least one year experience in incineration or combustion-type operations.
- C. Demonstrated competence in his field of expertise.

TITLE: Operations Manager

DATE: September 22, 1986

LOCATION: Baton Rouge, LA

DEPT: Operations

REPORTS TO: Plant Manager

#### I. SUMMARY -

Directs the effort of the Operations Department of the RES (LA) facility. Responsible for the safe and efficient management of personnel, equipment, and facilities involved with the segregation, movement, and incineration of hazardous wastes, within the established Corporate and Regulatory Agency guidelines.

# II. ACCOUNTABILITY -

- A. Is responsible for the efficient, safe, environmentally sound, and cost effective operation of the facility's involvement with the identification, segregation, movement, and incineration of 257 million pounds per year of hazardous waste.
- B. Accountable for the Operations budget totalling \$16.8 million per year.
- C. Responsible for the maintenance of a physical incineration system with a capital worth of \$22 million.
- D. Directs an Operational department comprised of six (6) salaried, and twenty-six (26) hourly employees, and one Operations Clerk.
- E. Responsible for development of an efficient organization characterized by competent supervisors and well trained hourly personnel. Handles first-step grievances with the Grievant and/or Shop Steward.
- F. Provides necessary operational input to the Sales, Technical, Safety, and Environmental staff to insure proper, coordinated plant operations.
- 6. Directly responsible for the safety and housekeeping standards and adherence for the operational aspects of the plant.

Position Description OPERATIONS MANAGER Page 2

## III. NATURE OF SCOPE -

The Operations Manager reports to the Plant Manager as do:

- 1. <u>Maintenance Manager -</u> Directs the overall efforts of the Maintenance Department.
- 2. <u>Controller Directs the Accounting, Payroll,</u> Purchasing, and Administrative functions of the Plant Controllership group.
- 3. <u>Technical Manager Directs the Technical and Lab</u> functions.
- 4. Transportation Manager Has responsibility for the maintenance and operation of the fleet equipment required to provide transportation services to the plant.
- 5. <u>Production Scheduler Correlates Sales and Operations</u>, and Burn Plan.
- 6. <u>Secretary Provides office management/clerical duties</u> to the Plant Manager.

The Operations Manager interfaces on a direct and frequent basis with the Sales Manager, Environmental Officer, and Safety and Health Manager, who report to the Plant Manager on a functional basis.

The Operations Manager also has periodic contact with governmental regulatory agencies as they undertake on-plant audits/inspections of the safety, industrial hygiene, and environmental aspects of the plant operations.

#### .A. <u>Supervision Received -</u>

The Operations Manager is free to act concerning his operation with the following exceptions:

- 1. Final personnel decisions.
- 2. Purchases exceeding approval limits.

Position Description OPERATIONS MANAGER Page 3

3. Final decisions related to safety and environmental regulations.

The cases must be reviewed/approved by the Plant Manager and/or the appropriate staff organization management. The Operations Manager receives indirect guidance from the management of the onplant and, in some cases, Corporate staff groups.

## B. Supervision Exercised -

Reporting directly to the Operations Manager are:

- 1. Assistant Operations Manager Responsible for overall shift operations of the facility.
- 2. Drum and Packaged Material Supervisor Responsible for the management and processing of packaged material.
- 3. Shift Supervisors (4) Oversee Plant Operations around the clock, primarily the incineration of hazardous waste.
- 4. Clerk Provides office management and clerical services to the Operations and Maintenance departments.

The Operations Manager indirectly supervises four (4) Incinerator Operators, nineteen (19) Plant Helpers, four (4) Treatment Operators, one (1) Clerk, and four (4) Combustion Engineers.

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Position Description OPERATIONS MANAGER Page 4

#### IV. QUALIFICATIONS -

- A. A minimum of a high school degree, preferable a B. S. degree in a technical discipline.
- B. A high mechanical aptitude toward chemical compustion theories with at least five (5) years chemical plant supervisory experience.
- C. Good management skills to direct and control the operations organization and effectively interface with applicable plant, sales, and regulatory personnel.
- D. Good technical and analytical skills to analyze and effect resolutions to operational problems/upset conditions.
- E. Good interpersonal skills so as to deal in a fair but firm manner with labor/personnel problems resulting from operational and/or personal situations.

TITLE:

Assistant Operations Manager

LOCATION:

Baton Rouge, LA

DATE: September 22, 1986

REPORTS TO: Operations Manager

DEPT: Operations

# I. SUMMARY -

To provide necessary assistance to the Operations Department as assigned by the Operations Manager. To oversee Shift Supervisors. Has ALL Operations responsibilities whenever Operations Manager is out of plant.

#### II. ACCOUNTABILITY -

Provide written follow-up on Waste Problem forms; provide follow-up on proper billing of extra charges incurred in Operations to customers; maintain records necessary for Kiln Ash disposal; update, as necessary, SOP's; keep RCRA training file up to date; monitor hourly attendance records; handle and schedule vacations both for Shift Supervisors and Hourly personnel. Perform other specific projects as assigned by the Operations Manager.

#### III. NATURE OF SCOPE -

Reports directly to the Operations Manager and maintains support relations with the Maintenance and Safety departments.

# IV. POSITION SPECIFICATIONS -

Good mechanical background, three (3) years experience in a chemical-related industry; minimum high school degree, preferably a B. S. Degree.

TITLE:

Operations/Maintenance Clerk

LOCATION: Baton Rouge, LA

REPORTS TO:

Operations/Maintenance Managers

DATE: June 2, 1984

# General Purpose

Perform general clerical work to assist the Operations Manager and the Maintenance Manager, thereby  $f_{\rm rec}$ ing them up for more non-routine activities.

# Major Responsibilities

- Maintain and update training records required by RCRA. Keeps running record of each hourly employee and reviews frequently for compliance. Advises Manager of deficiencies.
- Assists in orientation of new employees.
- 3. Maintains record of tools issued to Mechanics.
- 4. Maintains truck maintenance records, pre-trip inspections, VCR's, etc.
- 5. Checks employee time sheets for accuracy, tardiness, absenteeism, etc.
- 6. Maintains records of Operating Logs, chargs, etc. as required by RCRA. Checks for completeness, etc.
- 7. Preventive Maintenance:
  - a. Issue and receive completed lubrication sheets reports when lubrication is not done.
  - b. Issue and receive all completed mechanical, instrument and electrical check sheets reports when not done.
  - c. Issue and receive all completed tractor and trailer check sheets. Notify J. Richardson when each is due so it will be made available. Report when not done.
  - d. Issue monthly report on P.M. activity in plant and the truck shop.
- 8. Equipment Files:
  - a. Keep all work orders, purchase orders and spare parts information in each equipment's file.
  - b. Make quarterly review of 10 high maintenance items indicating what failed and cost from P.O's.
  - c. Transfer monthly the truck shop repair and P.M. work to master sheet that shows total activity on each tractor and trailer.
- 9. Warehouse:
  - a. Input issues and receipts to stores inventory control when this is in computer. Pull all orders for plants from computer and issue to purchasing.
- 10. Maintains 7-day running list of all scheduled receipts, incineration, landfill, and chem/bio. Updates daily.
- 11. Maintains cumulative record of tank field inventories, including BR numbers added to each tank.
- 12. Maintains cumulative record of kiln burnables inventory and lbs. processed.
- 13. Maintains record of caustic and nitrogen receipts and consumptions.
- 14. Calculates daily processing rates.
- 15. Keeps record of incinerator downtime and transmits daily to corporate.

# Page 2 - Operations/Maintenance Clerk

- 16. Does general typing and filing.
- 17. Maintains all PCB files and records as required by regulations.
- 18. Maintains record of overtime worked, refused, and keeps callout list current.
- 19. Performs other duties as required.

TITLE:

Shift Supervisor

DATE: September 22, 1986

LOCATION: Baton Rouge, LA

DEPT: Operations

REPORTS TO: Operations Manager

## SUMMARY -

To provide round-the-clock supervision over the operations of the plant, primarily the incineration of hazardous wastes.

#### II. ACCOUNTABILITY -

Oversee plant operations. Insure operations comply to environmental standards, assist Sales and Technical departments as needed, insure that transportation needs are met. Investigate community complaints and inspections. Issue the necessary permits for safe working conditions.

# III. NATURE OF SCOPE -

Reports directly to the Operations Manager and maintains support relations with Maintenance and Safety departments.

## IV. POSITION SPECIFICATION -

Mechanical background, three (3) years supervisory experience in a chemical-related industry, and a minimum of a high school degree.

TITLE: Drum and Packaged Material Supervisor

LOCATION: Baton Rouge, LA DATE: September 32, 1986

REPORTS TO: Operations Manager DEPT: Operations

#### I. SUMMARY -

To provide supervision for the management and processing of packaged material.

# II. ACCOUNTABILITY -

- A. To receive, manage, maintain, and store all Kiln packaged material.
- B. To receive, manage, and process packaged material for Landfill, Mix Pit, Gulp-Incineration, and Chem-Bio.
- C. To compile a daily Production Schedule for Kiln solids and Eductors so that Kiln will be operated at the most effective manner.
- D. Maintain an inventory control.

## III. NATURE OF SCOPE -

Reports directly to the Operations Manager, and maintains support of Technical, Sales, and Safety departments.

Supervision Exercised - Six (6) hourly employees on two shifts.

TITLE: Landfill Supervisor LOCATION: Baton Rouge Plant

REPORTS TO: Operations Manager DATE: February, 1985

## General Purpose

Directs the disposal/treatment of waste in the Landfill area in an efficient, safe and economical manner and implements/directs the use of manpower, facilities and material to maximize profit potentials and to assure compliance with all regulatory requirements. Confers with other sections/functions to maintain a coordinated effort to achieve objectives.

# Major Responsibilities

- 1. Oversees the Contractor Superintendent in the assignment and direction of manpower and the usage of equipment/facilities to assure efficient operation of landfill activies. Trains employees in operating procedures as required.
- Implements operating plans, troubleshoots and resolves operating problems for the landfill in order to meet disposal schedules and maintain inventory control. Supervises employees as required.
- 3. Coordinates with maintenance for the implementation of the maintenance program to minimize breakdowns/cost of repairs and maximize "on stream" time.
- 4. Requisitions equipment, supplies and raw material for assigned section to ensure the capability of treating waste materials.
- 5. Implements quality control procedures to ensure efficient treatment/disposition of wastes within established guidelines.
- 6. Directs assigned manpower to develop safe working habits and submits recommendations for improvement to the plant safety program to assure a safe plant operation/compliance with regulatory requirements.
- 7. Implements and communicates company policy to assure an awareness of rules, regulations and procedures and to develop an environment of high morale and healthy labor relations. Administers union contract to assigned personnel.
- 8. Guides/trains assigned manpower to ensure efficient and timely processing of waste materials in conformance with standard procedures.

- 9. Prepares production and inventory reports to monitor section performance and indicate current operating status.
- 10. Assists in the development of departmental budgets and submits recommendations relative to manpower, equipment/facility and supply requirements or assigned section.
- 11. Supervises maintenance repairs in the absence of Maintenance Foreman.
- 12. Ensure accuracy of section logs. Ensure that operators note, initial and time all charts. Review operating logs for accuracy. Ensure that adequate information is maintained both by the operators and through his personal log on activities of section, especially communications on problem areas and control action taken.
- 13. Maintains safety efforts according to guidelines established in the Plant Safety Manual. Implements program through routine monthly safety meetings, housekeeping inspections and control, development of Job Hazard Analyses; hazard evaluation, safety training, and routine inspections.
- 14. Ensures that process analyses are run as required for quality control and that all required samples are provided for follow-up laboratory analyses.
- 15. Continually reviews operator action with regard to operating procedures and ensures that all required controls are followed.
- 16. Decides on equipment shutdown in case of problems beyond the control of operators.
- 17. Performs Employee Evaluation of those employees under his supervision.
- 18. Ensures that operators maintain plant housekeeping consistent with overall minimum standards developed by the plant.
- 20. Maintains assessment of kiln dust/fly ash inventory and orders as required to process anticipated waste receipts.
- 21. Other activities as assigned by Operations Manager or Plant Manager.

TITLE:

MAINTENANCE MANAGER

DATE:

September 23, 1986

LOCATION:

Baton Rouge, Louisiana

DEPT:

Maintenance

REPORTS TO:

Plant Manager

## I. SUMMARY

Responsible for the overall maintenance program of the Baton Rouge, Louisiana facility. Ensures all equipment/facilities are maintained in condition to allow for the safe, cost efficient, environmentally sound waste disposal operation, meeting all company and regulatory agency guidelines.

# II. ACCOUNTABILITY

- A. Responsible for the total maintenance of the plant facility valued at \$22 million.
- B. Responsible for maintenance of operating equipment in an efficient/safe condition within an annual budget of \$1.2 million (1987).
- C. Directs a multi-disciplined maintenance organization comprised of seven (7) maintenance mechanics, six (6) laborers, two (2) painters, two (2) janitors, two (2) electricians, two (2) instrument technicians, one (1) maintenance planner, one (1) warehouse cler, and one (1) warehouse helper.
- D. Responsible for maintaining an adequate inventory of supplies, materials, tools, and spare parts to efficiently handle the maintenance of the facility.
- E. Responsible for the safe performance of all maintenance/project work performed by the company and contract personnel.
- F. Responsible for maintaining good labor relations with the work force through observance of company policies.
- G. Provides necessary input as to condition/capability of equipment/facilities to operations, technical, safety, and other plant disciplines.
- H. Responsible for the development/implementation/maintenance of comprehensive and cost effective maintenance programs.
- I. Responsible for the compilation/maintenance of required personnel, cost, safety, maintenance, etc., records and files as stipulated by company or regulatory agency policies.
- J. Provides indirect supervision to oversee contract maintenance and outside project personnel.

# III. QUALIFICATIONS

- A. A minimum of a high school degree; preferably a M.E. in Engineering.
- B. Five (5) years in petro-chemical process maintenance ~ two (2) years in supervision.
- C. Good technical and analytical skills to be able to analyze and effect decisive resolutions to operational problems and non-standard conditions.
- D. Ability to diagnose malfunctions in plant equipment. Ability to plan and schedule maintenance work for efficient use of maintenance personnel while coordinating with production.
- E. The ability to motivate personnel to work effectively with higher productivity.

TITLE:

MAINTENANCE PLANNER

DATE:

September 23, 1986

LOCATION: Baton Rouge, Louisiana

DEPT.:

Maintenance

REPORTS TO: Maintenance Supervisor

## I. SUMMARY

To coordinate and collect all information relative to equipment repairs, availability, utilization, and scheduled servicing. This includes the planning of preventive maintenance and corrective maintenance of all equipment. It is the central point to receive inputs from operations and maintenance which are to be included in historical records used to schedule and repair equipment in the shops or the field and to complete the posting associated with equipment records and scheduling boards.

#### II. ACCOUNTABILITY

- Perform activities in compliance with Rollins Environmental Services (LA) Inc. safety policies and practices.
- Plan maintenance of equipment including craft hours needed, coordination of tool and equipment and procurement of needed supplies.
- Inspect and make recommendations to the Operations Manager on necessary repairs, replacement, and procurement of tools and supplies.
- Prepare a daily maintenance work schedule, coordinating with the Maintenance Supervisor. Plan and schedule for all shifts.
- Maintain visual magnetic backlog boards.
- F. Maintain work order system.
- G. Collect information and transfer to historical records.
- Maintain a historical utilization and repair record file by equipment number. Records will include component histories. Records may be used for warranty claims.
- Assure that personnel have correct and necessary tools and equipment to perform work.
- Make routine inspections of repair work done.
- Coordinate with production and maintenance on preventive and corrective maintenance matters.

- L. Obtain necessary technical data and information as required to include in work order packages.
- M. Develop bar charts, graphs, critical path networks, and statistical tables as required to plan maintenance work.
- N. Catalog and compile important information in manuals for each piece of equipment.
- O. Order catalogs and manuals from equipment suppliers. As necessary, order and expedite special parts from vendors.
- P. Initiate and supervise oil analysis program.
- Q. Coordinate and plan work of outside vendor services.
- R. Responsible for operation of storeroom and inventory control.

# III. OUALIFICATIONS

- A. Ability to diagnose malfunctions in plant equipment. Ability to plan and schedule maintenance work for efficient use of maintenance personnel while coordinating with production.
- B. A minimum high school degree; some college preferred.
- C. Experience in maintenance procedures.
- D. Ability to read and accurately interpret drawings and blueprints.
- E. Aility to inspect and readily determine causes of malfunctions and plan immediate corrections.
- F. Ability to plan all maintenance work in a systematic and orderly fashion.
- G. Ability to orally communicate with area supervisors.

#### TECHNICAL MANAGER

# I. INTRODUCTION

The technical activities at the RES (LA) facility fall under the general supervision of the Technical Manager who is responsible directly to the General Manager. The Technical Department provides laboratory support for sales sample analysis, waste stream sample collection and analysis, regulatory sample collection and analysis and insuring that the data are of a reliable and reproducible nature by enforcing stringent adherence to OA/QC.

# II. DUTIES AND RESPONSIBILITIES

- Provide technical management and guidance to the laboratory.
- Evaluates incoming waste to determine acceptability and treatment option.
- 3. Interface with regulatory agencies regarding day-to-day compliance.
- 4. Assist in determining price requirements for disposal of incoming waste streams.
- 5. Review and approve laboratory analytical results to be submitted to state and federal regulatory agencies.
- Provide technical support and assistance to plant operations and sales, transportation and safety plantwide.
- 7. Review qualifications of candidates and hire personnel for position vacancies in technical area.
- Develop procedures and policies consistent with the efficient operation of the Technical Department.
- 9. Interface with Field Services as the situation demands.
- 10. Represent Technical and Company at symposia and conferences dealing with the issues of hazardous waste management.

Page 2 - Position Description - Technical Manager

## III. SUPERVISORY CONTROLS

The incumbent works under the general administrative direction of the General Manager. Broad problem areas are assigned within which program responsibilities are discussed along with general objectives, cost and time constraints, and general policy existing.

## IV. QUALIFICATIONS REQUIRED

Position requires a Bachelor's Degree in Chemistry with a Graduate Degree in the Environmental area being desirable. At least ten (10) years of experience in the field of hazardous waste management and some previous supervisory experience. Demonstrated technical skills, such as technical publications, and marketing experience are helpful.

Incumbent should possess a broad knowledge of hazardous waste problems, practices and management concepts with strong emphasis on regulatory compliance and environmental protection.

#### LABORATORY MANAGER

#### I. INTRODUCTION

The analytical laboratory, under the supervision of a Laboratory Supervisor, is responsible to the Technical Manager. The Laboratory is charged with the collection of waste stream samples, monitoring well samples, waste water samples, special samples from in-plant treatment processes and conducting the required analyses using approved methodology and following accepted Quality Assurance/Quality Control (QA/QC) practices. The Laboratory is the focal point within the RES (LA) facility for all analytical support and the development of the necessary data for smooth plant operations. The Laboratory is also the first principle contact for regulatory sample collection and analyses especially as it applies to the Groundwater Protection and NPDES Effluent Discharge Program.

# II. DUTIES AND RESPONSIBILITIES

- 1. Provides direct supervisory control and evaluation of performances for the Laboratory Technicians comprising the Union bargaining unit employees.
- 2. Provides general work area assignments to other professional staff and reviews progress.
- 3. Maintains awareness of environmental regulations and implements changes or new requirements as needed. Keeps subordinates and Supervisors aware of changing regulations and evaluates impact on operations.
- 4. Prepares reports for regulatory agencies and maintains professional working relationship with proper officials. Reviews reports prepared by others for submission to regulatory officials for completeness, accuracy and tracks timeliness.
- 5. Receives and reviews monthly reports on activities in the Regulatory Monitoring and Chemist areas. Discusses with Technical Manager problem areas and suggests corrective action and resources.
- 6. Maintains awareness of new and emerging USEPA approved analytical procedures and instrumentation as applicable to laboratory performance.
- 7. Prepare and implement a hazardous waste QA/QC Program that conforms to all USEPA data requirements.

- 8. Is directly responsible for identifying any Union matter to superiors and attempts to resolve difficulties at Laboratory Supervisor level before official complaint procedures are initiated.
- 9. Maintains technical liaison with other RES facilities.
- 10. Evaluates, reviews and upgrades any health and safety procedures as needed and makes sure all implace health and safety practices are followed by all Laboratory personnel.
- 11. In conjunction with the Technical Manager, assigns special projects to professional personnel, reviews the effort periodically, supplies technical guidance and reviews reports prior to distribution.
- 12. Maintains good customer relations and works with the Lab Pack Coordinator.
- 13. Prepare and submit to regulatory agencies the necessary environmental monitoring reports making sure all applicable QA/QC procedures are documented.
- 14. Conducts training sessions on specific instruments and procedures used in the Laboratory and documents the personnel file of those in attendance according to regulations.
- 15. Notifys appropriate RES (LA) officials of any excursions in facility discharges and follows up with letter to regulatory officials over appropriate signature.
- 16. Is directly responsible for identifying any Union matter to superiors and attempts to resolve difficulties at Lab Manager level befor official complaint procedures are initiated.
- 17. Maintains technical liasion with other RES facilities.
- 18. Evaluates, reviews and upgrades any health and safety procedures as needed and makes sure all inplace health and safety practices are followed by all Laboratory personnel.
- 19. In conjunction with the Technical Manager, assigns special projects to professional personnel, reviews the effort periodically, supplies technical guidance and reviews reports prior to distribution.
- 20. Performs other duties as assigned.

#### III. SUPERVISORY CONTROLS

The incumbent works under the general administrative direction of the Technical Manager. Broad problem areas are assigned within the Technical Department, project responsibilities assigned, time limitations explained, available resources and general policies are presented. Projects are reviewed for conformance to overall policy; regulations, program objectives and needs.

#### IV. QUALIFICATIONS REQUIRED

A working knowledge of hazardous waste problems, practices, regulations and management concepts: Emphasis needs to be on environmental protection, waste utilization and safe disposal.

Demonstrated managerial ability and the expertise to organize, direct, and bring to completion complex work assignments and routine Laboratory operation. An ability to work independently receiving only broad instructions as necessary.

Incumbent should have a Bachelor's Degree in Chemistry with graduate work in Chemistry and/or Environmental Engineering. Incumbent should demonstrate a minimum of 10 years diversified industrial experience and regulatory involvement with 5 years at the supervisory level. Incumbent should have a working knowledge of EPA and ASTM approved and recommended laboratory procedures.

#### ENVIRONMENTAL PROJECTS CHEMIST

# I. INTRODUCTION

The analytical laboratory, under the supervision of a Laboratory Supervisor, is responsible to the Technical Manager. The laboratory is responsible for the collection of waste stream samples, monitoring well samples, waste water samples, special samples from in-plant treatment processes and conducting the required analyses using approved methodology and following accepted Quality Assurance/Quality Control practices. The laboratory is the focal point within the RES (LA) facility for all analytical support and the development of the necessary data for smooth operations in the plant. The laboratory is also the first principle contact for regulatory sample collection and analyses especially as it applies to the groundwater protection program.

## II. DUTIES AND RESPONSIBILITIES

- 1. Conducts analyses, as required, on plant water effluents for regulatory compliance.
- 2. Prepares report on results of regulatory analyses and submits results to Laboratory Supervisor calling attention to areas of concern.
- Provides direct assistance in the conduct of all or part of the required environmental monitoring for the plant.
- 4. Develops new techniques for sampling, analysis, and treatment of waste materials as assigned by the Laboratory Supervisor.
- 5. Maintains up to date, clear, concise records of all analysis performed. Incorporates the necessary QA/QC procedures in all analysis and reports results in same record book.
- 6. Makes sure all monitoring wells are in good repair. Inspect landfill leachate collection and leak detection wells at least once a week to insure maintenance is kept up.
- 7. Supervises in-house environmental analyses of leak detection systems and keeps analyses up-to-date.

- Checks rainwater basins and ditches to insure proper water management.
- 9. Provides training to Laboratory Technicians and maintains required training records.
- 10. Evaluates Laboratory Technicians performance, makes constructive review comments and initiates negative personnel action as required.
- 11. Maintains laboratory safety and good housekeeping standards.
- 12. As required, provides supervision for the Laboratory Technicians in the conduct of their assignments. This includes the following:
  - a. Receipt, analysis, and dispatching of incoming waste streams.
  - b. Insures proper paperwork is completed including Bills of Lading, Manifests, etc.
  - c. Plant operation support analyses.
  - d. Water discharge analyses.
  - e. Routine analyses of sales samples.
  - f. Necessary process control analyses on the Chem/Bio System.
  - g. Reviews all activities for completeness and accuracy.
- 13. Performs other duties as assigned.

# III. SUPERVISORY CONTROLS

The incumbent works under the general direction of the Laboratory Supervisor. Basic problem areas are discussed and the incumbent is charged with conducting the necessary analytical requirements for completeness, regulatory compliance and as it may apply to program development.

## IV. OUALIFICATIONS REOUTRED

A broad knowledge of hazardous waste problems, practices, and management concepts with emphasis on environmental protection, waste utilization and disposal.

Incumbent should have a Bachelor's Degree in Chemistry. Graduate level work in Chemistry and/or Analytical Instrumentation is desireable. Incumbent should have at least 3 years experience in the laboratory and use of specific instruments required for analyzing components of a waste stream.

# ENVIRONMENTAL ANALYTICAL CHEMIST

# I. INTRODUCTION

The analytical laboratory, under the supervision of a Laboratory Supervisor, is responsible to the Technical Manager. The Laboratory is responsible for the collection of waste stream samples, monitoring well samples, waste water samples, special samples from in-plant treatment processes and conducting the required analyses using approved methodology and following accepted Quality Assurance/Quality Control (QA/QC) practices. The Laboratory is the focal point within the RES (LA) facility for all analytical support and the development of the necessary data for smooth operations in the plant. The Laboratory is also the first principle contact for regulatory sample collection and analyses especially as it applies to the Groundwater Protection Program.

# II. DUTIES AND RESPONSIBILITIES

- 1. Responsible for GC instrumentation, maintenance and operation.
- Conduct analyses, as required on PCB's scans and analyze for solvents in ash.
- 3. Perform fingerprint analyses for Sales samples on GC when required.
- 4. Will help develop procedures to insure all materials meet landfill requirements as far as solvents are concerned.
- 5. Conduct GC analyses on plant monitor wells for regulatory compliance.
- 6. Maintains up-to-date, clear, concise records of all analysis performed.
- 7. Maintains Laboratory safety and good housekeeping standards.
- 8. Performs other duties as assigned.

# III. SUFERVISORY CONTROLS

The incumbent works under the general direction of the Laboratory Supervisor. Basic problem areas are discussed and the incumbent is responsible for conducting the necessary analytical requirements for regulatory compliance and as it may apply to program development.

Page 2 - Position Description - Environmental Analytical Chemist

# IV. QUALIFICATIONS REQUIRED

A broad knowledge of hazardous waste problems, practices, and management concepts with emphasis on environmental protection, waste utilization and disposal.

Incumbent should have a Bachelor's Degree in Chemistry. Graduate level work in Chemistry and/or Analytical Instrumentation is desirable. Incumbent should have at least 3 years experience in the Laboratory and use of specific instruments required for analyzing components of a waste stream.

# SPECIAL PROJECTS CHEMIST

# I. INTRODUCTION

The analytical kaboratory, under the supervision of a Laboratory Supervisor, is responsible to the Technical Manager. The laboratory is responsible for the collection of waste stream samples, monitoring well samples, waste water samples, special samples from in-plant treatment processes and conducting the required analyses using approved methodology and following accepted Quality Assurance/Quality Control practices. The laboratory is the focal point within the RES (LA) facility for all analytical support and the development of the necessary data for smooth operations in the plant. The laboratory is also the first principle contact for regulatory sample collection and analyses especially as it applies to the groundwater protection program.

# II. <u>DUTIES AND RESPONSIBILITIES</u>

- Assists Laboratory Supervisor in evaluating new waste streams for determination of most environmentally safe disposal procedures.
- Conducts analyses, as required, on plant water effluents for regulatory compliance.
- Prepares report on results of regulatory analyses and submits results to Laboratory Supervisor calling attention to areas of concern.
- 4. Assists in establishing pricing for waste disposal using established guidelines.
- 5. Investigates on a reduced scale new methods of treatment and disposal taking initial direction from the Laboratory Supervisor and/or the Technical Manager.
- 6. Conducts heavy metal analysis using available instrumentation for such metals as lead, mercury, cadmium, zinc and any others that may be required prior to approving a waste stream for incineration.
- 7. Provides direct assistance in the conduct of all or part of the required environmental monitoring for the plant.

# Page 2 - Position Description - Special Projects Chemist

- Maintains up to date, clear, concise records of all analysis performed. Incorporates the necessary OA/QC procedures in all analysis and reports results in same record book.
- 9. Provides training to Laboratory Technicians and maintains required training records.
- 10. Evaluates Laboratory Technicians performance, makes constructive review comments and initiates negative personnel action as required.
- 11. Maintains laboratory safety and good housekeeping standards.
- 12. Serves as focal point for sample retention and disposal.
- 13. As required, provides supervision for the Laboratory Technicians in the conduct of their assignments. This includes the following:
  - a. Receipt, analysis, and dispatching of incoming waste streams.
  - b. Insures proper paperwork is completed including Bills of Lading, Manifests, etc.
  - c. Plant operation support analyses.
  - Water discharge analyses.
  - e. Routine analyses of sales samples.
  - f. Necessary process control analyses on the Chem/Bio System.
  - g. Reviews all activities for completeness and accuracy.
- 4. Performs other duties as assigned.

# III. SUPERVISORY CONTROLS

The incumbent works under the general direction of the Laboratory Supervisor. Basic problem areas are discussed and the incumbent is charged with conducting the necessary analytical requirements for completeness, regulatory compliance and as it may apply to program development.

# IV. OUALIFICATIONS REQUIRED

A broad knowledge of hazardous waste problems, practices, and management concepts with emphasis on environmental protection, waste utilization and disposal.

Incumbent should have a Bachelor's -Degree in Chemistry. Graduate level work in Chemistry and/or Analytical Instrumentation is desireable. Incumbent should have at least 3 years experience in the laboratory and use of specific instruments required for analyzing components of a waste stream.

#### ENVIRONMENTAL SCIENTIST

## I. INTRODUCTION

The analytical laboratory, under the supervision of a Laboratory Supervisor, is responsible to the Technical Manager. The laboratory is responsible for the collection of waste stream samples, monitoring well samples, waste water samples, special samples from in-plant treatment processes and conducting the required analyses using approved methodology and following accepted Quality Assurance/Quality Control (QA/QC) practices. The laboratory is the focal point within the RES (LA) facility for all analytical support and the development of the necessary data for smooth operations in the plant. The laboratory is also the first principle contact for regulatory sample collection and analyses as it applies to the Groundwater Protection Program.

# II. DUTIES AND RESPONSIBILITIES

- 1. Assist Environmental Projects Chemist in the collection of all regulatory and special project water samples utilizing approved EPA procedures and methods.
- Responsible for facility surface water management program.
   Collects necessary samples, has regulatory analysis conducted and determines discharge points.
- 3. Prepares reports to management on water discharges from regulated outfalls and assists in preparation of all required permit reports to State and Federal officials.
- 4. Responsible for maintaining sampling program concerning completed landfill and active area. All sampling to be conducted using established and approved procedures and in accord with required compliance agreements.
- Documents landfill sampling and analysis by preparing reports for internal review and as required by the regulatory agencies.
- 6. Inspect all site wells for integrity and proper maintenance on a routine basis.
- 7. Advise supervisor of any disrepair existing on the monitoring well system immediately.
- 8. Initiate Chain-of-Custody forms for all environmental samples, keep necessary logs in proper record documents and participate in keeping working area neat and orderly.
- 9. Performs other duties as assigned.

Page Two - Position Description - Environmental Sampling Specialist

## III. SUPERVISORY CONTROLS

The incumbent works under the daily supervision of an assigned Environmental Projects Chemist with general and administrative direction provided by the Laboratory Supervisor. Specific groundwater and landfill sampling tasks will be discussed and certain collection vessel requirements outlined along with the necessary OA/QC procedures to be used. Progress will be reviewed for conformance to overall job requirements, regulatory requirements and RES policy.

# IV. OUALIFICATIONS REQUIRED

A broad knowledge of environmental issues and the understanding of proper sample collection procedures are helpful. Incumbent should possess physical skills to accommodate the handling of heavy objects and carrying of water in large quantities.

Incumbent should have a Bachelor's Degree in the Physical/Biological Sciences with at least 15 credit hours of Chemistry. Graduate work in the Environmental field is desireable.

#### ENVIRONMENTAL COORDINATOR

## I. Introduction

The environmental coordinator, is a member of the Technical Department under the supervision of the Technical Manager. The Environmental Coordinator is charged with approval and/or knowledge of all process water and stormwater movement at the RES (LA) facility. Timely reporting of all environmental concerns, selection of USEPA approved analytical methods and selection of qualified outside contract services whether analytical or environmental engineering, and the development of good report with the regulatory comparity are essential to acceptable performance. The Coordinator is the primary contact for regulatory sample collection as it applies to surface water movement, groundwater protection, the NPDES effluent program and the facilities hazardous waste management plan. The Coordinator must know and apply all applicable regulatory rules and regulations, and keep the Technical Manager aware and current with all environmental permit situations.

# 11. Duties and Responsibilities

- Approves, directs and documents all process water and surface water transfers in the facility.
- Provides direct supervision of the Environmental Scientist who is assigned monitoring well sampling.
- Maintains awareness of applicable environmental regulations and implements changes or new requirements through the Technical Manager. Keeps all supervisors and management aware of changing regulations and evaluates impact on operations.
- 4. Prepares reports for regulatory agencies and maintains professional rapport with regulatory personnel. Reviews all reports that may be prepared by others prior to their submission to regulatory officials for completness, accuracy and tracks the timelines.
- 5. Receives and reviews all reports (analytical, consultant and internal) on activities as may pertain to environmental regulation(s). Discusses with Technical Manager problem areas and suggests corrective action and/or responses.
- 5. Works with the Laboratory Supervisor to maintain awareness and implementation of new and emerging USEPA approved analytical procedures and instrumentation as applicable to laboratory performance.
- 7. Interfaces with the Environmental Compliance Officer to develop the

Page Two Position Description Environmental Coordinator

corporate posture for regulatory and civil officials.

- 8. Maintains technical and environmental liaison with all facets of RES (LA) and other RES facilities.
- g. In conjunction with the Technical Manager, assigns special projects to professional personnel, reviews the effort, supplies enviornmental and technical guidance and reviews the resultant report for technical accuracy and completeness..
- 10. Serve as project engineer for environmental engineering, facility spects, or as a reviewer on such projects.
- 11. Has input into the development of new environmental permits and/or changes in existing ones, e.g., NPDES and state water permits, groundwater protection, Part B, etc.
- 12. Serves as focal point to notify Regulatory Agencies of permit compliance issues.

# III. Supervisor Controls

Works under the general administrative direction of the Technical Manager. Environmental projects are assigned, time limitations explained, available resources and general policies are presented. Assignments are reviewed for conformance to overall RES policy, regulations, and program objectives and needs.

## IV. Oualifications Required

A working knowledge of environmental regulations especially as they pertain to hazardous waste problems, practices, regulations and management concepts. Emphasis will be on environmental protection, and approved disposal.

Demonstrated environmental engineering and consulting expertise and the ability to organize, direct and bring to fruition approved operating practices. An ability to work independently receiving only broad direction as necessary.

Incumbent should have a Bachelor's Degree in Chemistry with graduate work in Chemistry and/or Environmental Engineering. Incumbent should demonstrate a minimum of 5 years diversified industrial manufacturing and regulatory involvement with 5 years at the supervisory level. The incumbent should have a working knowledge of EPA and Louisiana environmental rules and regulations and USEPA approved analytical procedures.

# WASTE RECEIVING CLERK

## I. <u>INTRODUCTION</u>

The analytical laboratory, under the supervision of a Laboratory Department is responsible for the accurate, timely and orderly receipt of accounting and regulatory documents for each waste stream entering the plant. This operation is also responsible for the dispatching of all incoming trucks to specific disposal points within the facility.

# II. DUTIES AND RESPONSIBILITIES

- 1. Prepare daily report for accounting and operations.
- Record in the laboratory log for each incoming waste its description, BR number, manifest document number, USEPA ID number, dispatch point and any miscellaneous information as needed.
- 3. Closely check each truck's paperwork for accuracy and compliance with regulations. Discrepancies are drawn to the attention of appropriate personnel immediately.
- 4. Issue Laboratory ID numbers based on communication with appropriate Sales Representative thus activating BR numbers.
- 5. Responsible for properly filing the waste safety sheets, waste data sheets, load order forms and dispatch tickets.
- Responsible for tracking documentation for sales samples.
- 7. Assist in preparing reports done by laboratory personnel.
- Prepare daily reports of incoming Bill of Ladings.
- 9. Complete Chain of Custody documents for outgoing samples.
- 10. Assist in keeping workplace clean and orderly and with proper supplies.
- 11. Maintain open communications with Sales, Accounting, Operations and Technical staff.
- 12. Perform other duties as assigned.

Page 2 - Position Description - Waste Receiving Clerk

# III. SUPERVISORY CONTROLS

The incumbent works under the direct supervision of the Technical Manager. The incumbent is given specific job assignments following those outlined in Section II herein. The incumbent is expected to perform the duties and responsibilities with a minimum of supervisory oversight.

# IV. OUALIFICATIONS REQUIRED

A broad knowledge of bookkeeping principles and practices along with principles of accounting and regulatory requirements associated with manifests and dispatch operations. The incumbent must demonstrate the capability to accurately and legibly transcribe numbers and information from one document to another. A basic understanding of electronic data collection, storage and retrieval is helpful.

Incumbent, at a minimum, should possess a High School diploma and have taken basic courses in bookkeeping and mathematics. College level course work in computer science, accounting, bookkeeping are all beneficial to good job performance.

## POSITION DESCRIPTION

#### WASTE MANIFEST CLERK

## I. INTRODUCTION

The analytical laboratory, under the supervision of a Laboratory Supervisor, is responsible to the Technical Manager. The Technical Department is responsible for complete and accurate submission of manifests for each waste stream entering the plant. As a regulatory requirement, it is imperative that each manifest be properly filled out, signed and copies submitted to appropriate officials.

## II. DUTTES AND RESPONSIBILITIES

- 1. Separate Bill of Ladings and associated paperwork. Check weights for accuracy. Scan manifests for completion and accuracy. Make two copies of each manifest and attach to Bills of Lading forwarded to Accounting.
- Submit Bills of Lading to Transportation who then sends to Accounts Receivable.
- 3. Mail original and generator's second copy of manifest back to generator. File copy of manifest with copy of Bill of Lading and copy of driver release form for each generator.
- 4. Log hazardous waste manifests for end-of-year report. Log Bill' of Ladings for daily report.
- Prepare monthly manifest report in-house.
- 6. Prepare and retain manifests generated as RES generator.
- 7. Maintain continuous communication with Manifest Coordinator for LA/DEQ.
- 8. Contact generator in case of manifest discrepancy, verbal authorization for correction is accepted, manifest discrepancy form is completed to await letter of authorization. Copy of manifest and discrepancy form sent to LA/DEQ Manifest Coordinator. Upon receipt of written authorization a copy is attached to manifest and a copy sent to LA/DEQ Manifest Coordinator.

## Page 2 - Position Description - Waste Manifest Clerk

- 9. On rejected waste loads a log book is kept on each rejected waste. Clerk notifies LA/DEQ Manifest Coordinator of rejection and prepares written notice of rejection for appropriate RES official signature. Files letters sent to LA/DEQ concerning manifest activities.
- 10. Obtain proper signatures on manifests from railroad officials.
- Perform other duties as assigned.

## III. SUPERVISORY CONTROLS

The incumbent works under the direct supervision of the Technical Manager. The incumbent is given specific job assignments following those outlined in Section II herein. The incumbent is expected to perform the duties and responsibilities with a minimum of supervisory oversight.

## IV. OUALIFICATIONS\_REQUIRED

A broad knowledge of hazardous waste regulatory requirements regarding manifesting, delivery and disposal. The incumbent must demonstrate successful transcription of information from one form to another, follow-up immediately on problem issues and maintain good communication lines with regulatory officials.

Incumbent, at a minimum, should possess a High School diploma and have successfully completed course work in recordkeeping and business math.

## \_\_\_\_\_POSITION DESCRIPTION

#### LAB PACK SPECIALIST

## I. INTRODUCTION

The Technical Department, under the supervision of the Technical Manager, is responsible for the receipt, inspection, repackaging and dispatching for disposal of incoming Lab Pack waste streams. The Lab Pack operations are under the direct supervision of the CA/QC Officer and is responsible for the review of all regulatory procedures for acceptance of Lab Pack loads and the establishing of QA for safe disposal.

## II. DUTIES AND RESPONSIBILITIES

- 1. Reviews all packing lists for acceptance and insures all paperwork is filled out according to established guidelines.
- 2. Conducts quality assurance practices on all Lab Packs received for treatment. Makes determinations on repacking and dispatching based on this OA.
- 3. Interfaces on a routine basis with Operations personnel for the safe and secure disposal of Lab Pack material.
- 4. Interfaces with generators and alternate disposal facilities on an as-needed basis.
- 5. Reviews all labeling and makes sure they are accurate and contain proper information.
- 6. Reviews manifests for accuracy and description.
- Performs record keeping as required for waste tracking.
- Performs other duties as assigned.

## III. SUPERVISORY CONTROLS \_\_\_

The incumbent works under the direct supervision of the QA/QC Officer with general and administrative supervision provided by the Technical Manager. Specific work requirements are discussed with the incumbent by his immediate supervisor and trouble loads and regulatory problems are reported immediately to his superiors.

Page 2 - Position Description - Lab Pack Specialist

# IV. <u>OUALIFICATIONS REDUIRED</u>

A broad knowledge of hazardous waste problems, practices, compatibilities, reactivities, packaging and management concepts with emphasis on environmental protection and disposal is advantageous.

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Incumbent should have a Bachelor's Degree in Chemistry. Graduate studies and/or degree in Chemistry/Chemical Engineering is desirable. Some experience in safe handling of chemicals and containers is also desirable.

#### POSITION DESCRIPTION

TITLE: Plant Engineer - Projects LOCATION: Baton Rouge Plant

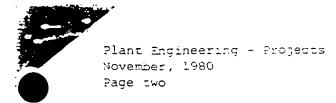
REPORTS TO: Flant Manager DATE: November, 1980

#### General Purpose

This position is responsible for new capital projects and equipment modification required for system improvements, debottlenecking, cost savings, plant automation, safety, energy conservation, industrial hygiene improvements, and environmental control.

#### Major Responsibilities

- Provide engineering support for system improvement, debottlenecking investigations, plant automation, energy conservation, environmental control, safety, industrial hygiene contol, and environmental control.
- 2. Design, prepare specification and select equipment to satisfy project demands.
- 3. Prepare cost estimates for projects suitable for capital authorization requests.
- 4. Provide engineering support and coordination for plant capital projects.
- 5. Coordinate implementation of capital and plant change projects.
- 6. Maintain scheduling liaison with operations to ensure smooth scheduling and minimum interruption to production. Assures timeliness of projects under his responsibility.
- 7. Prepare bid tabulations and requisitions for major equipment, construction materials, and construction service for projects.
- 8. Direct activities of "in-house" personnel or outside contractors to install necessary facilities to complete project.
- 9. Work with plant manufacturing and technical personnel to help bring project onstream and assist in bringing project to operational completion.
- 10. Participate in Safety Program OSHA compliance, process hazards reviews, operational readiness inspections, and adequacy of fire protection systems. Assures that new facilities meet Safety Standards. Responsibile for Safety of Contractor personnel working on his projects.
- 11. Provide engineering investigation to troubleshoot and perform corrective repairs for equipment problems, thereby reducing maintenance costs.
- 12. Ensure that all necessary utilities, permits or inspections required by Local, State, or Federal Governments are in compliance.
- 13. Provide liaison between plant and Corporate Engineering on projects undertaken at the plant site.
- 14. Responsible for general plant appearance.



- 15. Assist in preparation of Capital Budgets + providing project scope and cost estimates.
- 16. Evaluates the performance of Engineering Consultants and recommends continued interface.
- 17. Assures that new facilities can be efficiently maintained.
- 18. Assists in start-up of new facilities.
- 19. Supplies instructions for operating and maintaing new facilities.
- 20. Assists maintenance with problems on equipment that has been installed under his direction.
- 21. Assures that equipment has been properly tested prior to start-up.
- 22. Standardizes equipment selection when possible to simplify spare parts requirements.
- 23. Assures proper expediting of services, materials, drawings, and equipment associated with his projects.
- 24. Prepares monthly status reports on his projects.
- 25. Discusses equipment and material selection with vendors, consultants and contractors.
- 26. Provides equipment and project technical data to Corporate Engineering or other functional plant groups.
- 27. Other projects are assigned by Plant Manager.

## POSITION DESCRIPTION

#### LABORATORY TECHNICIAN

#### I. INTRODUCTION

The analytical laboratory at RES (LA), under the supervision of the Laboratory Supervisor, is responsible to the Technical Manager. The analytical laboratory is responsible for receipt of all incoming waste samples and the review and approval of all necessary manifests. The analytical laboratory is also responsible for conducting the necessary screening analysis on sales samples prior to receipt of the documented waste stream. The analytical laboratory is also responsible for the analysis of routine parameters of samples collected from the water treatment outfall and from the monitoring wells associated with groundwater protection requirements. Incoming waste samples are analyzed ato determine specific chemical characteristics associated with the proposed disposal option. Incineration samples are analyzed for heat content, ash, sorub, chlorine, several metals and any other parameters as may be required to insure environmentally safe thermal destruction. Waste samples determined to be candidates for stabilization and encapsulation are tested for reactivity and other select parameters associated with this disposal technique. The analytical laboratory is responsible for conducting the required analyses in a safe fashion while adhering to strict Quality Assurance/Quality Control (QA/QC) guidelines.

## II. DUTIES AND RESPONSIBILITIES

- 1. Using approved safety equipment, the incumbent collects a representative sample from each incoming waste vehicle.
- Conduct analyses on sales samples to determine appropriate disposal option.
- 3. Conduct physical parameter analyses of incoming wastes to determine composition and disposal procedure and to insure received sample correlates to sales sample. Conducts elemental and conventional parameter analyses on wastewater samples from plant streams.
- 4. Performs quality control testing on plant effluents and in-process materials to assure compliance with established standards.
- 5. Document all analytical tests conducted in the prescribed manner to ensure the acceptability and accessibility of the data for review by regulatory officials.
- 6. Maintain laboratory and laboratory equipment in a safe, clean and orderly fashion and follow-up to ensure that good housekeeping and safety procedures are followed.

# Page 2 - Position Description - Laboratory Technician

- Maintain proper inventory of laboratory supplies and standards.
- Periodically participates in quality assurance/quality control testing by analyzing unknowns and reports results to QA/QC Officer.
- Keeps an accurate, legible and up-to-date record book of all waste analyses and instrument standardizations.
- 10. Prepare and standardize analytical solutions and reagents used in analyses of waste.
- 11. Submits recommendations to the QA/OC Officer concerning new testing techniques to insure continued regulatory compliance of the facility operations.
- 12. Completes the Material Dispatch Report for incinerable wastes including analytical results for heat of combustion, viscosity, ash content, halogens, sulfur, scrub and heavy metals of concern.

## III. SUPERVISORY CONTROLS

The incumbent works under the direct supervision of the Laboratory Supervisor. The incumbent is given specific job assignments following those outlined inection II herein. The incumbent is expected to perform the duties and responsibilities with a minimum of supervisory oversight.

# TV. CUMITICATIONS PROUTERD

A broad knowledge of bookkeeping principles and practices along with principles of accounting and regulatory requirements associated with manifests and dispatch operations. The incumbent must demonstrate the capability to accurately and legibly transcribe numbers and information from one document to another. A basic understanding ical instrumentation used for developing the disposal recommendations.

Incumbent should have a Bachelor's Degree in Chemistry, or the equivalent in experience. Incumbent should have experience in working, analyzing and handling a broad range of hazardous materials.

ATTACHMENT J
INSPECTION SCHEDULE

# ATTACHMENT J

# INSPECTION SCHEDULE

# Table of Contents

I.	PURPO	OSE	]
п.	INSPE	CTION ITEMS	j
	A. B. C. D. E.	Operating Equipment	1
III.	RESPO	ONSE TO INSPECTION RESULTS	2
IV.	RECO	RDKEEPING	3
		List of Exhibits	
Exhibit	J-1	Inspection Schedule	
Exhibit	J-2	Inspection Schedule and Inspection Log SWP-1307	
Exhibit	J-3	Safe Working Practices Inspection of Emergency/Safety Equipment, SW-5018 Plant Interior and Inside Perimeter Checks, SW-1304	
Exhibit	J-4	Leachate Well Report and Inspection SWP-1305	
Exhibit	J-5	Landfill Inspections SWP-1207	
Exhibit	J-6	Leak Detection System SWP-1208	
Exhibit	J-7	Operating Equipment Inspection Schedule SP1-005-01	

#### ATTACHMENT J

#### INSPECTION SCHEDULE

#### I. PURPOSE

The inspection program instituted at RES(LA) is used to identify any equipment malfunctions, facility deterioration, operator errors and discharges which may cause or may lead to release of hazardous waste constituents to the environment or a threat to human health. RES(LA) conducts inspections on a regular schedule to identify problems or potential problems and allow them to be corrected before they cause harm to human health or the environment. This inspection program has been designed to provide comprehensive inspection procedures and recordkeeping protocol which will ensure inspections are conducted at the specified frequency and results are documented in the operating record for the plant. The contents of the program are summarized in Exhibit J-1 and discussed below as they relate to specific areas and equipment used for hazardous waste management. The inspection schedule and procedures will be updated as new facilities are constructed.

#### II. INSPECTION ITEMS

## A. Operating Equipment

Operating equipment for Landfill Cell 717 post-waste activities remains in the landfill area and is used to maintain cover and structural integrity.

## B. Safety and Emergency Equipment

RES(LA) maintains numerous safety and emergency equipment that is available to respond to emergencies and accidents. This equipment includes an internal communications and alarm system, emergency lighting, spill control equipment, respirators, safety and fire equipment. The equipment is inspected by the Safety Department (Closure Coordinator, after facility closure) on a regular basis to ensure all equipment is in stock and operational to effectively respond to emergency situations.

#### C. Security Devices

RES(LA) uses a system of locked gates, fencing, TV monitors and warning signs to prevent unauthorized entry. Most of the RES(LA) facility is surrounded by 5 foot high perimeter fencing with locked entry. Remaining portions prevent unauthorized entry by a natural barrier. All gates to the plant are either normally locked, manned by a guard on a 24 hour basis or equipped with a TV monitor. Warning signs are posted in conspicuous places around the waste management areas. These security devices are inspected for damage and corrosion on a regular basis to ensure they provide adequate security for these facilities.

## D. Landfill

The RES(LA) Landfill Cell 717 was used for land disposal of solid wastes. The Landfill Cell 717 has a runon/runoff control system which is inspected quarterly and after storms for erosion and other signs of malfunction. This system is a part of the perimeter diking which surrounds the RES(LA) facility. The following items are checked when inspecting this system:

- 1. Cracks on the crest, embankment slopes or abutment and toe areas;
- 2. Settlement, depression or sink holes on the embankment or downstream toe area;
- 3. Movement resulting in irregulatories in alignment or non-uniformity of slopes, such as slides, sloughs, or bulges;
- 4. Erosion by surface runoff, seepage, or irrigation on the crest, slope abutment contacts and downstream toe area, and erosion by wave action on the upstream slope;
- 5. Seepage on the embankment slopes, abutment and foundation contacts, and downstream area, including boils;
- 6. Damp areas on the downstream slope, abutments and downstream toe area;
- Animal burrows, trees, and brush growth on crest, slopes, abutment and toe areas that could cause detrimental seepage or obstruct areas from inspection;
- Conditions of upstream slope and crest paving, including weed growth and signs of distress; and
- 9. Condition of surface drainage facilities and their ability to prevent erosion or ponding.

RES(LA) also has installed a leachate collection and removal system above the clay barrier, to extract leachate from Landfill Cell 717. A leak detection system is installed below the clay barrier. These systems are inspected to detect the presence of leachate in the collection system, evidence of erosion, corrosion or structural damage and to ensure proper pump operation.

The leachate tank is inspected quarterly for evidence of cracks, corrosion or deterioration of the shell exterior. Any indication of these problems are recorded in the inspection log and remedial action is initiated. The shell interior is inspected annually to check for corrosion and other weaknesses. The tank foundation is inspected quarterly for signs of settlement, erosion or ponding. The piping, instrumentation and transfer pumps are inspected quarterly for evidence of cracks, poor connections or deterioration. The perimeter diking is inspected quarterly and after storms for sign of seepage, erosion, cracks or other structural damage. The unloading area is inspected daily for spills, leaks, settlement, and erosion. The tank overfill controls and level indicators are checked daily during tank gauging operations.

## E. Monitoring Equipment

Monitoring equipment is used at the RES(LA) facility to monitor the effectiveness of waste management techniques practices at the facility. The monitoring equipment consists of a system of groundwater monitoring wells. Each of the monitoring components of the system is inspected on a regular basis to ensure no structural damage to the equipment has occurred and all devices are functional.

## III. RESPONSE TO INSPECTION RESULTS

The inspections are performed on a prescribed frequency in conformance with written instructions contained in internal RES(LA) procedural memoranda. The procedures and inspection forms are reviewed periodically and updated as may be required due to the nature of the facility, results of previous inspections and changes in regulations. Current revisions to the inspection forms are available at the RES(LA) facility for inspections.

After each inspection is conducted, the inspection log is submitted to RES(LA) Operations Foreman (Closure Coordinator, after facility closure) for review. During review, the Operations Foreman analyzes the content of the log and, if necessary, discusses results with the inspector. If an item on the list is identified as unsatisfactory, the Operations Foreman evaluates the comments made concerning the item and identifies the appropriate response to be taken. Often unsatisfactory conditions can be simply resolved through the issuance of a work order which instructs the maintenance department on the procedures to follow when correcting an unsatisfactory situation. Once maintenance has been completed, the date the maintenance was performed is recorded on the original work order which is filed with the inspection log. If the situation is more severe requiring immediate emergency response, the Operations Foreman will immediately implement the appropriate aspects of the Contingency Plan. If an item on the inspection schedule continually fails to pass inspection, the item will be reevaluated on the basis of its proposed function, mode of operation and necessity. Upon the results of the evaluation, the item will either be removed from service, replaced or redesigned to function more effectively.

## IV. RECORDKEEPING

Inspection logs and work orders are maintained by RES(LA) for all facility inspections. Inspection logs and work orders for these items are maintained by the Maintenance and Safety Departments (Closure Coordinator, after facility closure). Examples of inspection logs and work orders are presented in the following pages. All inspection records and applicable work orders are kept for at least three years following the date of inspection.

EXHIBIT J-1
INSPECTION SCHEDULE

EXHIBIT J-1
INSPECTION SCHEDULE

Area/Equipment	Specific Item	Types of Potential Problems	Minimum Inspection Frequency
Safety, Communication &	Telephone System	Power Failure	Monthly/As needed
Emergency Equipment	Fire Water	Power, clogging, cracks or leaks in hoses	Monthly
	Emergency Lighting	Burned out bulb, low charge, dirty lenses	Monthly
	Respirators	Low pressure, control setting, straps, dirty face piece	Monthly
	Fire Trucks	Low on fuel, oil or coolant, worn tires or brakes, pump operation	Monthly/After each use
	Fire Monitors	Failure, direction adjustments	Monthly/After each use
	Foam Generator	Power failure	Monthly
	Fire Pumps	Power, clogging, breaks or leaks in hoses	Monthly
	Fire Blanket	Dirty, wet, holes	Monthly
	Fire Extinguisher	Needs recharging	Monthly
	Fire Hose	Cracks, leaks, connections	Monthly
	First Aid Equipment	Items out of stock or inoperative	As used
	Eyewash Station	Out of solvent, dirty bottle, seal	Monthly
	Emergency Shower	Water pressure, flow restrictions	Monthly
Security Devices	Gates, Locks & Fencing	Corrosion, damage to fencing, sticking lock	Weekly
	Warning Signs	Lost or corroded	Weekly
	Security Lighting	Burned out bulbs, dirty lens	Weekly

# EXHIBIT J-2

INSPECTION SCHEDULE AND INSPECTION LOG SWP-1307

PROCEDURE:

INSPECTION SCHEDULE AND INSPECTION LOG

PROCEDURE NO: SWP- 1307

DATE ISSUED: August 28, 1984

1. This SWP documents the Inspection program instituted at RES(LA) to inspect the facility for malfunctions and deterioration, operator errors and discharges which may cause or may lead to release of hazardous waste constituents to the environment or a threat to human health. RES(LA) conducts inspections on a regular schedule to identify problems or potential problems and allow them to be corrected before they cause harm to human health or the environment. This inspection program has been designed to satisfy the requirements of 264.15 by providing comprenensive inspection procedures and recordkeeping protocol which will ensure inspections are conducted at the specified frequency and are documented in the operating record for the plant. The contents of the procram are summarized in the attached table and covered in more detail in SWP's covering each specific inspection.

Also attached is a list of specific inspections made, the frequency of each, and the individual responsible for completing the inspection.

Discussion: Following are excerpts from regulations concerning Inspection Schedules and documentation of inspections via the Inspection Log.

- 1. The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to:
  - a) A release of hazardous waste -- A release or hazardous waste constituents to the environment; or
  - b) A threat to human health The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.
- The owner or operator must develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

- 3. He must keep this schedule at the facility:
- 4. The schedule must identify the types of problems (e.g., maifunctions or deterioration) which are to be looked for curing the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike. etc.)
- 5. The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction of any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use.
- 6. The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals; a schedule must be set up to ensure that the problem does not lead to an environmental or human health hazard. When a hazard is imminent or has already occurred, remedial action must be taken immediately.
- 7. The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

#### Responsibility:

<u>All Employees</u> are responsible for continuous inspection of facilities and equipment in their immediate area.

<u>Various Members of Supervision</u> are responsible for completion of specific Inspections as outlined in the SWP's covering each individual inspection report.

The <u>Department Managers</u> are responsible for reviewing Inspections made of areas within their responsibilities and transmitting them to the Operations Secretary for entry into the Inspection Log and for filing.

The <u>Plant Manager</u> will review those reports submitted to him and pass them on for filling.

The Operations Secretary will enter the inspection information into the Inspection Log and file the inspection form.

#### Description of Inspections Made:

#### Operating Equipment

Operating equipment used in hazardous waste management at the RES(LA) facility includes forklifts, dump, flatbed, pick-up and vacuum trucks and landfill equipment. RES(LA) forklifts are used to unload waste shipments and transfer them to the appropriate areas for storage or disposal. Dump, flatbed and pick-up trucks are used to transport wastes to various areas of the plant. The vacuum trucks are used to gulp wastes from their containers or sumps and transfer them to the tank farm or other unloading areas. The landfilling equipment remains in the landfill area and is used to landfill, stabilize wastes and place the wastes in the landfill. Inspections of RES(LA) operating equipment are conducted prior to each usage by RES(LA) operations personnel.

#### Safety and Emergency Equipment

RES(LA) maintains numerous safety and emergency equipment that is available to respond to emergencies and accidents. This equipment includes an Internal communications and alarm system, emergency lighting, spill control equipment, respirators, safety and fire equipment. The equipment is inspected by the Safety Department on a regular basis to ensure all equipment is in stock and operational to effectively respond to emergency situations.

#### Security Devices

RES(LA) uses a system of locked gates, fencing, TV monitors and warning signs to prevent unauthorized entry into waste management areas. The RES(LA) facility is surrounded by 6 foot high perimeter fencing with locked enty. All gates to the plant are either normally locked, manned by a guard on a 24 hour basis or equipped with a TV monitor. Warning signs are posted in conspicuous places around the waste management areas. These security devices are inspected for damage and corrosion on a regular basis to ensure they provide adequate security for these facilities.

#### Container Storage Areas

Containerized waste awaiting treatment or disposal are held in a designated container storage areas. The container storage areas are inspected on a weekly basis to ensure waste storage adheres to standard requirements and to detect any potential hazards in storage. Some of the items which are included in inspections conducted for this area are container placement and stacking, seals and labels on containers and containment area foundation.

#### Tank Earm

The RES(LA) tank farm is used to store liquid wastes destined for inclneration. The tank farm currently consists of ten storage tanks and associated pumps, piping and instruction surrounded by a perimeter dike system. An unloading station is also situated at the tank farm for waste transfer activities. The RES(LA) tank farm is inspected on a regular basis for any hazardous or unusual conditions which may affect facility operations or cause harm to human health or the environment.

RES(LA) storage tanks in the tank farm are Inspected daily for evidence of cracks, corrosion or deterioration of the shell exterior. Any indications of these problems are recorded in the inspection log and remedial action is initiated. The shell interior is also inspected annually by emptying the tank and manually entering the tank to check for corrosion or other weaknesses. The tank foundation is inspected weekly for signs of settlement, erosion or ponding. The piping, instrumentation and transfer pumps are inspected weekly for evidence of cracks, poor connections, improper lubrication and deterioration. The nitrogen blanketing and carbon absorbtion system is also inspected weekly for overall operation. The perimeter diking is inspected weekly and after storms for signs of seepage, erosion, cracks or other structural damage. The tank farm unloading area is inspected daily as used for spills, leaks, settlement, and erosion as is the general tank farm area. All tank overfill controls and level indicators are checked daily during tank gauging operations.

#### Wastewater Treatment System

RES(LA) has an intergrated system of tanks, basins, pumps and piping which is used to chemically treat plant wastewater streams. This system is inspected on a regular basis for any hazardous or unusual conditions or operations. Each item within the system has specific inspection requirements as presented below.

RES(LA) tanks involved in wastewater treatment are inspected weely for evidence of cracks, corrosion or deterioration of the shell exterior. Any indications of these problems are recorded in the inspection log and remedial action is initiated. The shell interior is also inspected annually by emptying the tank and manually entering the tank to check for corrosion or other weaknesses. The tank foundation is inspected weekly for signs of settlement, erosion or ponding. The piping, instrumentation and transfer pumps are inspected weekly for evidence of cracks, poor connections, improper lubrication and deterioration. All tank overfill controls and level indicators are checked daily during tank gauging operations.

## Incineration System

The RES(LA) inclnerator is used to thermally destruct solid and liquid waste streams received at RES(LA). Standard operating procedures ensure that all inclnerator monitoring and combustion devices are routinely inspected for proper operation according to established operating conditions. The inclnerator system itself is also visually inspected for noises, leaks, spills, fugitive emissions and proper valve and control setting. Also, the emergency shutdown and alarm systems are checked prior to each start-up as a part of standard operating procedures.

#### LandfIII

The RES(LA) landfill is used for land disposal of solid wastes. The landfill has a run-on/run-off control system which is inspected weekly and after storms for erosion and other signs of malfunction. This system is a part of the perimeter diking which surrounds the RES(LA) facility.

RES(LA) also has installed a leachate collection and removal system to extract leachate from the landfill. This system is inspected to detect the presence of leachate in the collection system, evidence of erosion, corrosion or structural damage and to ensure proper pump operation. The mixing facilities associated with the landfill are also inspected weekly for spills, leaks and the general appearance.

#### Rainwater Basins

RES(LA) uses a series of 5 rainwater basins to contain potentially contaminated stormwater runoff. These basins are inspected weekly and after storms for signs of erosion and deterioration.

Additionally, the liquid level in the basin is measured daily as a part of RES(LA) gauging operations.

#### Monitoring Equipment

Monitoring equipment is used at the RES(LA) facility to monitor the effectiveness of waste management techniques practiced at the facility. The monitoring equipment consists of a system of groundwater monitoring wells. Each of the monitoring components of the system is inspected on a regular basis to ensure no structural damage to the equipment has occurred and all devices are functional.

## <u>Unloading Areas</u>

RES(LA) uses a number of ramps, pads and curbed areas for unloading hazardous wastes. These areas are inspected on a daily basis as used to ensure they are properly maintained and operated to prevent hazardous waste releases. The unloading pacs and ramps are inspected for cracks, settlement, deterioration, spalling and evidence of leaks or spills. Most unloading areas are tied to a sump system to collect and remove liquids from the unloading station. The sumps are inspected for cracks, subsidence, erosion, seepage, overflow debris and pump operation.

## Procedure:

- After each inspection is conducted, the inspection form is submitted to the Department Manager for review. During review, the Department Manager analyzes the inspection results and, if necessary, discusses results with the inspector. If an item on the list is identified as unsatisfactory, the Department Manager evaluates the comments made concerning the item and identifies the appropriate response to be taken. Often unsatisfactory conditions can be simply resolved through the issuance of a work order which instructs the maintenance department on the procedures to follow when correcting an unsatisfactory situation. Once maintenance has been completed, the date the maintenance was performed is recorded on the original work order which is filed with the inspection log. If the situation is more severe requiring immediate emergency response, the Department Manager will immediately implement the appropriate aspects of the Contingency Plan. If an item on the inspection schedule continually fails to pass inspection, the item will be reevaluated on the basis of its proposed function, mode of operation and necessity. Upon the results of this evaluation, the item will either be removed from service, replaced or redesigned to function more effectively.
- 2. The completed forms are sent to the Plant Manager for review, then to the Operations Secretary for entry in the Inspection Log. The Inspections form is then filed.
- 3. Attached is a copy of the Inspection Log. The Operations Secretary will log the date and time of the inspection, the name of the person conducting the inspection, pertinent comments, and any corrective action taken.
- 4. All inspection forms completed by the Safety Manager will be maintained in the Safety Manager's office.

## Table 1,7,1 Inspection Schedule

Area/Equipment	Specific Hem	Types of Potential Problems	Minimum Inspection Erequency
Prenating Equipment	Yacuum Trucks	Law on fuel, oil or coolant, worn tires or trakes, cracks or freaks in tank, cracks or leaks in hases, vacuum pump operation, overall operation	Monthly
	Forklift	Low on fuel, oil or coolant, worn tires, or hrokes, drum grappile, implement operation, overall operation.	Monthly
	Pump/Pick-up/ Flotbed Trucks, Landfill Equipment	Law on fuel, ail or conlant, worn tires or Erakes, crocks or holes in bed	Monthly
Safety, Communication and	Telephone System	Power failure	Monthly/as needed
Emergency Equipment	Fire Water	Power, clagging, cracks or leaks in hases	Manshly
	Emergency Lighting	Burned out bulb, low charge, dirty lenses	Monthly
	Respirators	Low pressure, control setting, straps, dirty face piece	Manthly
	Fire Trucks	Low on fuel, all or coolant, worn tires or brakes, pump operation	Monthly/after each use
	Fire Monitars	Failure, direction adjustment	Monthly/after each use
	Foam Cenerator	Power failure	Monthly
	Fire Pumps	Power, clogging, breaks or leaks in hoses	Monthly
	Fire Blanket	Dirty, wet, holes	Monthly
	Fire Extinguister	Meeds recharging	Monthly
	Fire Hose	Cracks, leaks, connections	Monthly
	First Aid Equipment	Items out of stock or inaperative	As used
e - 4	Eyewash Station	Cut of solvent, dirty bottle, seal	Monthly
	Emergency Shower	Water pressure, flow restrictions	Monthly
Security Devices	Cates, Locks and Fencing	Corrosion, damage to fencing, sticking lock	""eekiy
	Warning Signs	Lost or corroded	Weekly
	Security Lighting	Purned out bulbs, dirty lens	Weekly

## Table 1-2-1 (continued) Inspection Schedule

Area/Equipment	Specific Item	Types of Potential Problems	Minimum Inspection Frequency
Container Storage Areas	Container Placement and Stacking	Aisle space, height of stacks	F. 0. 49.14
	Sealing of Cantainer	Open lids	Wankin
	Lobelling of Containers	Improper identification, visable from aisle	Week iv
	Containers	Corrosion, leaks, structural defects	Maekiy
	Segregation of Incompeta- late Wastes	Storage of incompatible wastes in same area	Went to
	Pellets	Broken, worped, unstable	See Ly
	Base or foundarian	Crocks, spatting, subsidence, erosion, wet spots	Maaktv
	Dives	Crecks, deterioration	Wag De
	Debris and Pafuse	Clog pump, cesthetics	Weekly
	Romps	Creeks, spolling, subsidence, erosion	Pres Dr
	Warning Signs	Corresion or missing	216691 c
Incinerator Tanks	Tenk Shell Exterior	Crocks, leaks, carrosion, erasion, oders, temperature changes, discolaration, buckies, bulges	Weekty
	Tank Shell Interior	Cracks, locks, corresion, erosion, loss of metal thickness	Megris
	Piping and Instrumentation	Cracks, leaks, corresion, erosion, cdor, discolaration, littings, connections, cops, overeil deterioration	WeeVis
	Overfill & Level Indiscrers	Crocks, leaks, corrosion, deterioration, sensitivity, general aperation of gauges and gauges	Delivida idea
	Nitragen Plankering/ Careen Adsorption System	Low pressure, volve positions, everall operation, general deterioration	Манду
	Foundation	Settlement, grasion, depressions, ponded water	Weekly
	Perimeter Diking	Crecks, settlement, seepage, erosion, structural damage	Modely, ofter story
	Sump	Cracks, spalling, settlement, erosion, pump operation	Weekly
	Fransfer Rumps	Pewer, alogging, lubrication, pressure, scals	Weekly
	Constal Area	Debris, refuse, spiiled meterial	Defiz
Wastewater Treatment System	Impoundment	Seepage, cracks, erosion, structural damage	Vicebia, ofter storms
	Tenks	Sennaga, cracks, erosian, structural damage	Mingkly, after starts
	Piping cril Instrumentation	Cracks, leaks, carresian, erosice, edor, discoloration, fittings, connections, caps, averall deterioration	Teero

## Table 1-7-1 (continued) Inspection Schedule

krea/Equipment	Specific Item	Types of Potential Problems	nimum Inspr in Frequency
	Coundation	Settlement, erosion, depressions, bonded water	<sup>M</sup> fe
	Transfer Pumps	Power, clagging, lubrication, pressure, seals	Modicly
	General Area	Pebris, refuse, spilled material	Caily
scineration System	Incinerator	l'oises, leaks, spills, fugitive emissions, control settings	Daily, as used
	Emergency Shutdown Alarm System	Control settings, inoperative system	Paily, as used
endfill	Perimeter Diking	Seepage, cracks, erasion, deterioration, improper operation	Weekly, after storms
	Leachate Callection & Removal System	Presence of leachate, corrosion, erosion, structural damage, improper level control adjustment, pump operation	Paily/as used
	Leak Detection System	Presence of liquids	Weekly
	Stabilization Area	Dust, odors, container storage, proper operation	`"eekiy
	Leachate Tank	Exterior for crocks, leaks, corrosion, erosion odors, temperature changes, discoloration, buckles, hulges	Weekly
	Wind Dispersion	Equipment inoperable	Weekly
a Guipment	Groundwater Monitoring Vells	Structural damage, deterioration	Y'eekiy
iste Unloading eas	Pads/Ramps	Creeks, settlement, curbing, deterioration, spills	Doily, as used
	Sumps	Crocks, subsidence, erosion, seepage, overflow, perimeter debris, pump operation.	Poily, as used
ick t*ash	tanks	Exterior for cracks,	Weekly
tions		leaks, corrosion, erosion.	· cekty

RES (LA) INC. INSPECTION LIST

DESCRIPTION	FREQUENCY	INSPECTOR(S)
General Plant Inspection	Weekly and After Storms	Appropriate Supervisor
Drum Storage and Processing Area	Weekly	=
Container Storage	Weckly	=
Tank Fleld Inspection and Report	Dally	Treatment Operator
Basin Inspection and Report	Daily	Treatment Operator Appropriate Supervisor
Leachate Well Report	Weekly	Leachate Operator Appropriate Supervisor
Fire Pump Checklist	1-	Safety Manager
Emergency Light Inspection	1	
Respirator Inspection	=	=======================================
Fire Blanket Inspection	=	=
Neutralizer - Eye Wash Inspection	14	1
Emergency Shower and Eye Wash	_	2
Emergency Safety Equipment-Fire Extinguisher	=	=
Stack Opacity Readings	Dally	Incinerator Operator Appropriate Supervisor
ASB Logs	Dally	Appropriate Operator Appropriate Supervisor

# RES (1A) INC. INSPECTION LOG

Week Beginning at 0500 on			Compiled By	ed By				
	FREQUENCY	HON	TUE	WED	THUR	FRI	SAT	SIII
General Plant Inspection	Weekly							
Tank Field Inspection	Da11y							1
Basin Report	Dally					ļ		
Container Storage Inspection	Weekly							
Drum Processing and Storage	Weekly							
Leachate Report	Weekly							
Stack Observations	Dally				,			
ASB Log	Daily							
Fire Pump Checklist	Week1y					       	-	:
Emergency Light Inspection	Weekly							• • • •
Respirator Inspection	Weekly							:
Fire Blanket Inspection	Weekly	-		·		.		; ; !
Neutralizer - Eye Wash Inspection	Weekly							!
Emergency Shower and Eye Wash	Weekly		••					
Emergency Safety Equipment-Fire Extinguisher	Weekly			ļ				;
MOTATIONS NADE (UST REVERSE SIDE IF NEEDED)						;		-

## EXHIBIT J-3

SAFE WORKING PRACTICES
INSPECTION OF EMERGENCY/SAFETY EQUIPMENT, SW-5018
PLANT INTERIOR AND INSIDE PERIMETER CHECKS, SW-1304

Exhibit I-2-2
Safe Working Practices

Inspection of Emergency/Safety Equipment SW-5018

Plant Interior and Inside Perimeter Checks SWP-1304

I-2-23 Revised July 1987

## SAFE WORKING PRACTICES

TITLE: Inspection of Emergency/ SWP#: 5018

Safaty Equipment

REV.#: 2

AUTHOR: Steve Varnado

DATE: June 19, 1987

#### PURPOSE

To ensure that all installed and/or stored emergency/safety equipment is in place and in good working order when needed.

## DISCUSSION

A complete inspection of all emergency/safety equipment is conducted by the Safety Manager each month. If it is necessary to use any of this equipment the Supervisor is responsible for restoring it to useable condition, or reporting it to the Safety Manager for followup. It is imperative that all emergency/safety equipment be ready for use if needed.

## PROCEDURE

I. Attached is a sketch showing location of emergency/safety equipment. Also attached are copies of the inspection forms used showing each piece of equipment. Following is a list of the various forms:

Fire Extinguisher Inspection Form
Fire Truck Inspection Form
Fire Monitor Inspection Form
Fire Fighting Foam Inspection Form
Fire Hose Inspection Form
Respiratory Inspection Form
Emergency Light Inspection Form
Neutralization-Eye Wash Inspection Form
Fire Blanket Inspection Form

The inspections are normally performed by the Safety Manager each month. On occasion the inspections may be performed by the Supervisor. Corrective action must be initiated immediately if discrepancies are noted. The date any corrective action is completed must then be noted on the inspection form.

The Safety Manager will maintain a file of the completed inspection forms. The Operations Clerk will maintain the Inspection Log as outlined in SWP-1307 - Inspection Log.

II. The telephone system and 2-way radios are repaired as failure is noted. There are extra radios available so that critical needs will always be met. The TV monitors are also in continuous use and are repaired as problems occur.

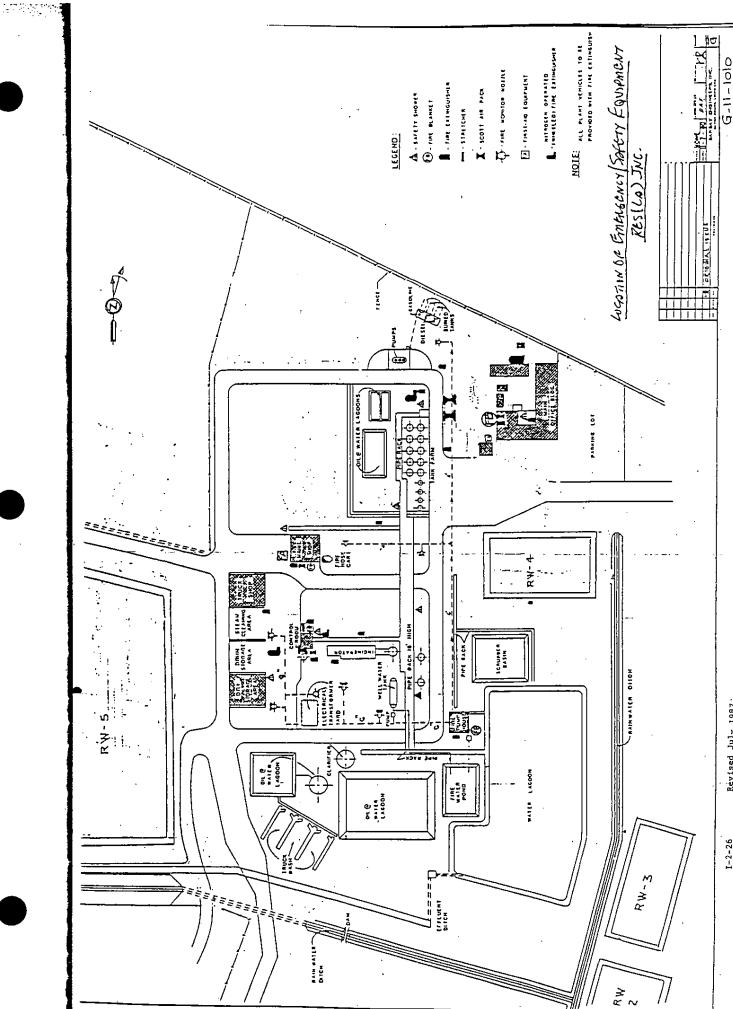
The Firewater/Foam pump is run and checked, thoroughly by the maintenance department per their preventive maintenance computerized system. This can be further verified by the pump recorder records which are filed in the Safety Department.

The Fire truck is maintained on a routine monthly schedule by a contractor who maintains all plant vehicles. The records of this maintenance are on file at Sussex contractors. Further the truck is used weekly in fire brigade drills and is inspected and run at that time.

Other safety items such as glasses, goggles, faceshields, hard hats, boots, gloves, coveralls and slicker suits are stores stock items and are discarded and replaced when broken, damaged or contaminated.

First aid stations are checked monthly by a contractor who replenishes items as needed and invoices for each first aid station. The invoices are filed in purchasing and are a record of the frequency and stocking of the cabinets.

	DATE:	
Operations Manager	,	
Co.f Management	DATE:	
Sarety manager		
Plant Managar	DATE:	
	Operations Manager  Safety Manager  Plant Manager	Operations Manager  DATE:  Safety Manager  DATE:



Revised July 1987:

1-2-26

# FIRE TRUCK INSPECTION FORM

INSPECTOR	DATE	FUEL LEVEL	OIL LEVEL	COCLANT/WATER LEVEL	TIRES	BRAKES	PUMPER
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# FIRE MONITOR INSPECTION FORM

SPECTOR	DATE	MONITOR LOCATION	VALVE CONDITION	NOZZLE	CORROSION	ROTATION
		i				
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	{		1-2-28			
			Revised July 1987			

# FIRE HOSE INSPECTION FORM

INSPECTOR	DATE	LOCATION	HOSE CONDITION	FITTING CONDITION	VOLUME at LOCATION
		}			
	}				
					·
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			I-2-29		
			Revised July	1987	1
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# FOAM INSPECTION FORM

NSPECTOR	DATE	LOCATION	TYPE OF FCAM	VOLUME ON HAMD	EXPIRATION DATE
	1				
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	1		I-2-30 Revised July	1987	

# PLANT FIRE EXTINGUISHER CHECKLIST - RES (LA) INC.

					DATE:	
				•	BY:	<u> </u>
		 	IN	CUARCET !	CZALED	COMMENTS
	LOCATION	TYPE	PLACE !	CHARGED	SEALED (	COPPLEXIS
		2 1/2 H <sub>2</sub> O i				
	D. E. TRAILER	20// ABC		1		
			<u></u>	i	1	
	LODDBY PUMP PAD	20# ABC				
	TANK FARM NORTH	20# ABC				
	TANK FARM NORTH	150# ABC		 		
	MAINTENANCE SHOP	20# ABC			! 	
		! i			 	
	UNDER KILN BELT	ABC SYSTEM			! 	
-	LODDBY BURNER	20# ABC		 	! !	
	SCRUBBER PUMPS	20#_ABC	-	) 	i i	
	BELT FEED PLATFORM	1 20#_ABC		<u> </u>	1	
-	DRUM STORAGE (NE)	150# ABC		[	i i	· · · · · · · · · · · · · · · · · · ·
	FIRE PUMP	20# CO2		I	i i	
; .	FIRE PUMP MCC	20# Halòn				
	ASB 3 MCC	16# CO <sub>2</sub>		1	i !	
<del></del>	ASB 1 MCC	16# CO <sub>2</sub>		i :		
<del>ं</del> २	FORK TRUCK	2 1/2# ABC		 	1	
9.	FORK TRUCK	2 1/2# ABC		i I	í (	
0.	CONTROL ROOM	16# CO2		1	1 1	<u> </u>
1.	LAB SAMPLE RACK	20# ABC		1	!	
2.	LAB SAMPLE RACK	20# ABC		1	i †	
3.	LABORATORY	20# CO2		1	1	i !
4.	LABORATORY	2 1/2# ABC	1	l t	! !	
5.	LABORATORY	2 1/2# ABC	1	1	i i	
.6.	N. of Kiln	150# ABC	 	1	1	1
7.	N. of Kiln Afterb		! !	i	1	
1.9	N. of Kiln	20# ABC	1	1	1	1
25.	FIRE TRUCK	20# ABC	1	1	र   	<u> </u>
	FIRE TRUCK	20# ABC	l l	1	! !	
31.	MIX PIT N.	1	1	i	<u> </u>	i i

# - PLANT FIRE ENTINGUISHER CHECKLIST

		:	IN ;			1
<u>).                                    </u>	LOCATION	TYPE	PLACE !	CHARGED	SEALED	COMMENTS
2	MIX PIT S.	150# ABC				
3.	RAILCAR	150# ABC				:
4	SALES (EAST)	5# ABC			<u></u>	t
5	SALES (WEST)	5# ABC	<del></del>		<u> </u>	1
6	ACCOUNTING (EAST)	5# ABC			! ! !	1
7	ACCOUNTING (WEST)	5# ABC			! !	1
.8.	ENGINEERING (EAST)	5# ABC				1
19.	ENGINEERING (WEST)	5# ABC			1	1
٠٥.	OPERATIONS (EAST)	5# ABC			! !	!
11.	OPERATIONS (WEST)	5# ABC			1	1
42.	TRAINING (EAST)	5# ABC		! !	! ! <del>!</del>	1
43.	TRAINING (WEST)	5# ABC		! ! !	† 1	1
44.	REPACK (NORTH)	20# ABC		! !	<u> </u>	1
1	REPACK (WEST)	20# ABC	 	! !	t !	1
46.	REPACK (SOUTH)	20# ABC	<u> </u>	! ! !	<u> </u>	
47.	DRUM PAD (1)	20# ABC		! !	<u> </u>	
48.	DRUM PAD (2)	20# ABC	 	!	<u> </u>	
49.	DRUM PAD (3)	20# ABC	 			
50.	DRUM PAD (4)	20# ABC				
51.	DRUM PAD (5)	20# ABC			_	
52.	CHANGEHOUSE HALL	5# ABC			1	
53	CHANGEHOUSE LR	5# ABC				
54.	001 OUTFALL MCC	20# Halon	[	[	1	
55.	POWER GENERATOR	20# Halon	 	[ ]		
56.	GUARDHOUSE	20# ABC	7 ————————————————————————————————————	i		
57.	RT 12 PATROL TRUCK		1			

## EMERGENCY SHOWER/EYEWASH

				DATE:	
				BY:	
). 	LOCATION	EYEWASH     FLOW	SHOWER FLOW	COMMENTS	
	TANK FARM NORTH	! !	1		
	TANK FARM SOUTH		1		
	CAUSTIC - T36	1	<u> </u>		<del></del>
	CAUSTIC - T37		!		
	DRUM STORAGE A	1 1 1	1 1		
·	DRUM STORAGE B	1			
	DRUM STORAGE C				
	DRUM STORAGE D	1	1		
•	DRUM STORAGE E	1	<u> </u>		
0	RAILCAR	! !	! !		
1	EAST OF CONTROL ROOM		1 1		
2:	ASB 3 (PUMP AREA)	!	<u> </u>		
	ASB 1 AND 2		1		<del></del>
<u></u>	LABORATORY		!		<del></del>
5	TRUCK UNLOADING	!			<del> </del>
6	001 OUTFALL	1			
7	DIRECT BURN PAD				
8	MRV EAST				
9	MRV WEST				<u>_</u>
0.	NORTH MIX BUILDING			· · · · · · · · · · · · · · · · · · ·	· .
1.	SOUTH MIX BUILDING		!		
2	TANK 5312 WEST		!		
3.		-			
4.					
5.		† 1	1		· · · · · · · · · · · · · · · · · · ·

ATE:

LOCATION	TYPE	CYLINDERS PRESS.	CLEANLINESS	COMMENTS
ST - LAB DOOR	RESUSCITATOR			
ST-LAB DOOR	RESUSCITATOR			
NTROL ROOM Inside	MEDICAL OXYGEN			
NTROL ROOM Outside	SCBA			
NTROL ROOM Outside	SCBA			
NTROL, ROOM Outside	SCDA			
NTROL ROOM Outside	SCUA			
ontrol Room Outside	SCBA			
NTROL ROOM Inside	SCBA			
ONTROL ROOM Inside	SCBA			
introl Room	SCBA (Bottle)			
ontrol Room	SCBA (Bottle)			
Jarehouse Outside	SCBA			
Jarehouse Outside	SCBA			
Jarehouse Outside	SCBA			
Jarehouse Outside	SCNA			
Warehouse Outside	SCBA			
ECHARGE BANK	MAINTENANCE SHOP			
	Tad Ook of Place	net if loce than full	11 refill cylinder.	

heck cylinder pressure, should be 2000 PSI, if less than full refill cylinder. xamine facepiece for cleanliness.

heck positions of regulator controls; should be set in demand mode with bypass closed. Il straps should be fully extended.

heck recharge back pressure, fill hose and bottle connecting hose.

I-2-31c Revised June 1988

בשניויסניותר ז דד.

LOCATION	TESTED	CHANGED	LIGHTS CLEAN	COMMENTS
'S HALLMAY (Offices)				
W HALLWAY (Offices)				
O - WEST WALL				
R COMPRESSOR ROOM				
Hillos - Moda Todilin				
Harrion Hoose Court				
NTROL ROOM - NOICH				
RE PUMP HOUSE				
OREROOM				
			. · · ·	

ing a ladder for access

eck cleanliness of light lenses - clean.

sh test button and observe performance and charge indicator for several seconds.

low light output or charge indicator shows low charge, note on report.

I-2-31d Revised June 1988

FIRE BLANK

DATE:

LOCATION	IN PLACE	CLEAN	DRY	COMMENTS
LAB - EAST WALL	-			
FIRE PUMP HOUSE				
CONTROL, ROOM				

Open storage holder and confirm blanket in place.

Theck blanket for cleanliness and dryness,

Note any deficiencies.

I-2-3le Revised June 1988

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## SAFE WORKING PRACTICES

المحالية المرابع المولية فيهاد والأنالية

TITLE: Plant Interior and Inside

SWP#: 1304

Perimeter Checks

REV.#: 2

AUTHOR: Steve Varnado

DATE: June, 1987

## PURPOSE

This procedure describes the routine inspections made once every two hours by Security around the plant inside perimeter, looking for any potential emissions, any potential malfunctions of plant facilities and equipment, or any deficiency in plant fencing.

## DISCUSSION

Since the RES(LA) facility is spread out over a relatively large area, frequent inspections should be made, particularly in areas that are not very active in the off hours or on week-ends. This serves as a supplement to the Outside Odor Inspections and as a key part of the on-going general inspection program at RES(LA).

## PROCEDURE

Attached is a copy of form BP128R which is submitted by Security to the RES(LA) Health & Safety Manager each day. Included on the form are spaces for entry of specific areas checked, times of observation, wind speed and direction, weather conditions, problems noted and actions taken. A sketch of the plant interior and the perimeter fencing is shown on the back of the report form.

The inspection is conducted as follows:

- (1) Every two hours, the Security Patrol Guard will conduct an inspection.
- (2) The Security Patrol Guard will drive along the entire perimeter fence inspecting the condition of the fence, gates, warning signs, lighting etc. noting any irregularities or problems. Any discrepancies will be recorded on BP123R.
- (3) The Security Patrol Guard will also specifically check at those plant areas listed on the form BP128R for any irregularity or conditions of concern. Some conditions of concern would be odors, fugitive emissions, eroded containment dikes, audible or visual alarms, fence

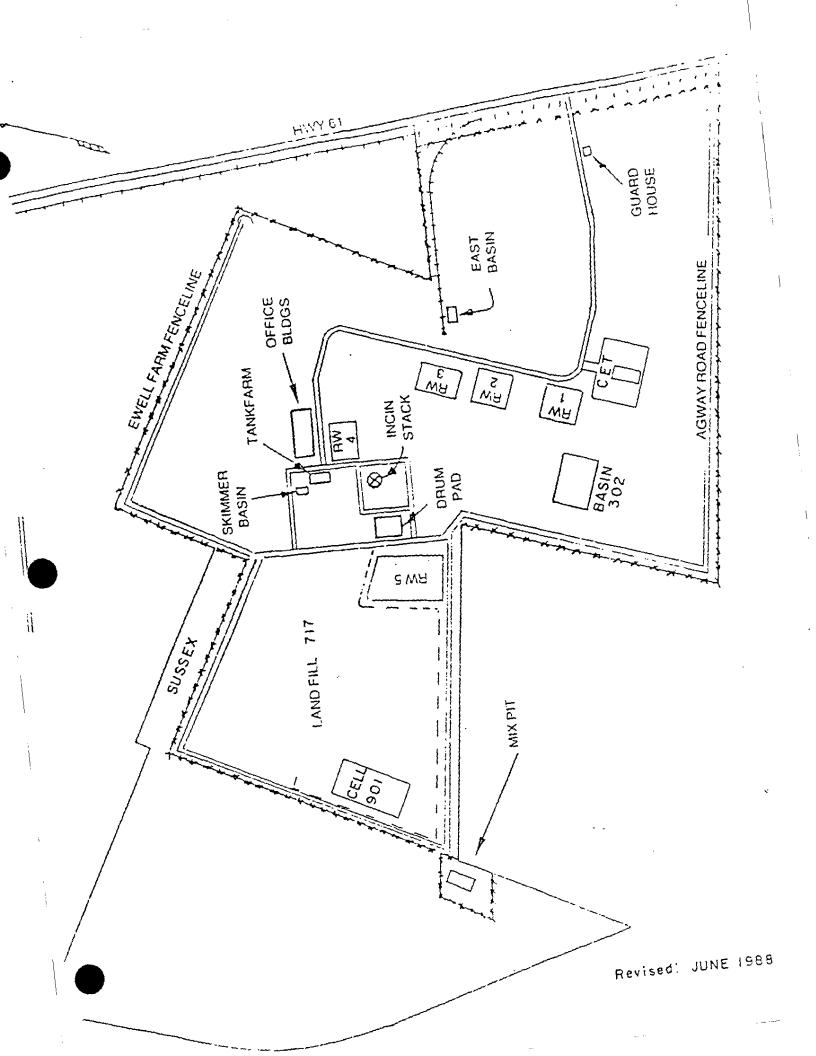
integrity, unsecured buildings, inadequate lighting and unusual activity or conditions.

- (4) All irregularities or potential problems are to be noted along with corrective action taken. Immediate action should be taken when the condition observed could threaten human health or the environment. In the case of fence integrity, repairs should be initiated by work order the following work day after discovery. The notation of the repaired fence will be made on form BR128R the shift following the fence repair completion.
- (5) All completed inspection reports will be submitted at the end of the day to the RES(LA) Health and Safety Manager.

DATE:	
SHIFT:	_

# RES (LA) PLANT INTERIOR AND PERIMETER ODOR & SECURITY CHECKS

AREAS CHECKED		b	NUICATE TIN	NES OF CHEC	<u> </u>	
East Basin-Railcars						
2. Main Office Bldgs.						
3. Tank Farm - Sump			}			
4. Skimmer Basins						
5. Stack Conditions						
6. Trailer Parking lot						
7. Ewell Farm Fenceline						
8. Drum Pad Area						
9. Landfill Area						
10. Mix Pit 1 & 2						
1. 302 Basin						
Agway Road Fenceline						
Vind Speed - Direction						
Veather Conditions						
NOTE PROBLEMS / ACT audible or visual alarms,	<del></del>					
unusual activity or condi	tions.					
		·				
				<del></del>		<u> </u>
	<del></del>					
				-		
						<u> </u>
			Reviewed I	Ву	<del></del>	
Sate Guard's Signature			Date			
	<u> </u>		<i>Date</i>			
· -						



# EXHIBIT J-4 LEACHATE WELL REPORT AND INSPECTION SWP-1305

Exhibit 1-2-9

Leachate Well Report and Inspection SWP-1305

PROCEDURE: LEACHATE WELL REPORT AND INSPECTION

PROCEDURE NO: SWP- 1305

DATE ISSUED: August 28, 1984

Purpose: To insure proper inspection of the landfill leachate collection and removal system so that potential problems can be identified and corrected in timely fashion to prevent harm to human health or the environment, and to provide documentation for review and follows.

<u>Discussion</u>: Following are excerpts from regulations dealing with leachate collection and removal systems in landfills.

"A landfill (except for an existing portion of a landfill) must have:

- l) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or ground water or surface water at anytime during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner must be:
- 2) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The Regional Administrator will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:
  - (i) Constructed of materials that are:
  - (A) Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and
  - (B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and
  - (ii) Designed and operated to function without clogging through the scheduled closure of the landfill.

## Responsibility

The Leachate Operator is responsible for operation of the leachate removal system so that pumps are kept in automatic operation to switch on when a leachate level is sensed by level controls and pump the level down to less than I foot of depth. He is also responsible for conducting inspections at least weekly to insure the system is functioning properly and to record the volume of leachate pumped and to report any irregularities observed to Supervision so that corrective action can be initiated.

The <u>Supervisor</u> is responsible for training the <u>Leachate Operator</u> in the operation and inspection of the system, reviewing inspection reports, initiating corrective action, and following up as often as necessary to ensure compliance.

## General Rules and Regulations

- 1. Leachate wells must be equipped with a pump and automatic level controls to remove liquid as it is sensed.
- 2. Level controls should be set to pump any liquied sensed down to less than 12 inches depth.
- 3. Level controls should be recalibrated at least quarterly.
- 4. Leachate must be pumped directly to the leachate tank. Until the leachate tank installation is complete the leachate must be pumped directly to Basin 302.

## Procedure

- 1. All Leachate wells and associated piping will be visually checked each working day by the Leachate Operator, looking for the following:
  - a) Check to see that all pumps are in operating condition
  - b) Check all piping, valves, fittings, etc for leakage.
  - c) Check the surrounding area around each leachate well for any evidence of damage or leakage to the wells, casings, pumps, piping, etc.
  - d) all irregularities will be reported to Supervision of corrective action.
- 2. A thorough inspection of the above items will be made weekly by the Leachate Operator and the following items will be recorded on the Leachate Well Report and Inspection (see attached).
  - a) The hours each pump operated since the last inspection and the volume of liquid pumped.
  - b) A notation that each pump is functioning properly in the automatic position.
  - c) The date of the lost calibration of the leachate pump level controls.
  - d) any deterioration, damage, or irregularity observed so that corrective action can be initiated.
- 3. The Supervisor will review the report, initiate any required corrective action, and forward the report to the Operations Secretary for entry into the Inspection Log and filing. Copies will be sent to the Operations Manager and the Plant Manager for review.

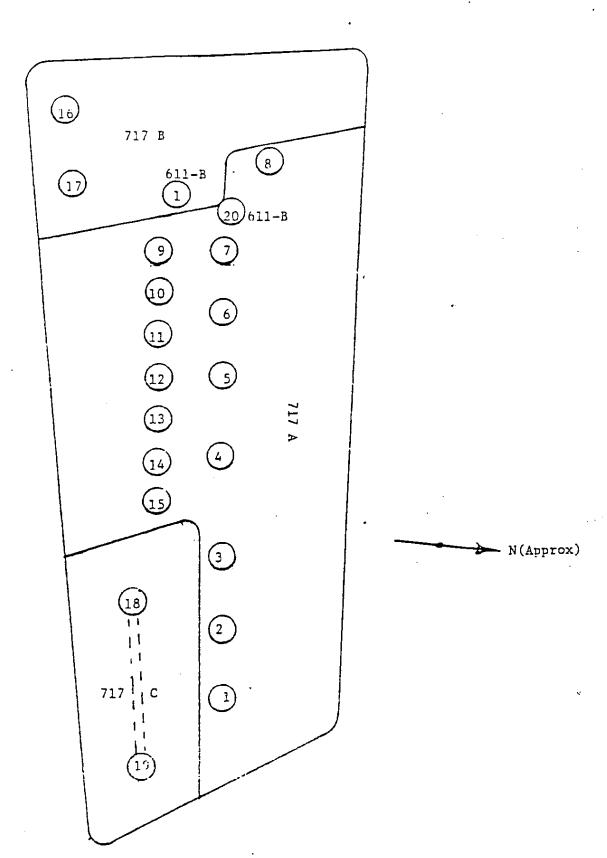
## LEACHATE WELL REPORT AND INSPECTION

DATE	:	TI	ME:	INSPECT	ED BY:		
	Location	liours Pumped	Gallons Pumped	Pumps Working Properly to Pump Level Bown <12"	Remarks	Calibr Date(S	ration Signature
:	717 A				•		
<u>,  </u>	717 A						
3	717 A						
.	717 A						
<u>;                                    </u>	717 A						
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,	717_A						
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3	717 A						
4	717 A						
.5	717 A						
.6	717 B						
7	717 B						
.8	717 C						·
.9	717 C						
20	611 B						
	611 B						¥
_	· ·			· · · · · · · · · · · · · · · · · · ·			

T 7 ~~

I: Inspector is to note any leaks in well or distribution piping and any malfunction in numps, level controls or timers. Inoperable systems should have notes describing the probler rective action taken, and completion date.

## CELL SECTIONS 611-P. 717 A. P. S.C.



I-2-67

EXHIBIT J-5

LANDFILL INSPECTIONS SWP-1207

Exhibit I-2-13

LANDFILL INSPECTIONS SWP-1207

I-2-88 Revised July 1987 Page 2 Swe-1207

SWP-1707 - Odor Inspection Outside Plant

SWP-1304 - Flant Interim and Perimeter Checks

SWP-1307 - Inspection Schedule and Inspection Log

## ITEMS TO BE INSPECTED

Hollowing are specific checks to be made during the inspection.

- Cracks on the crest, embankment slopes or abutment and toe areas of run-on/run-off control diking and landfill support levees.
- Settlement, depressions or sink holes on the embankment or downstream toe areas.
- Movement resulting in irregularities in alignment or nonuniformity of slopes, such as slides, sloughs, or buldes.
- 4. Erosion by surface runoff; seepage, or irrigation on the crest.
- Seepage on the embankment slopes, abutment and founcation contacts, and downstream area, including boils.
- 6. Damp areas on the downstream slope, abutments and downstream toe area.
- 7. Animal burrows, trees, and brush growth on crest, slopes, abutment and toe areas that could cause detrimental seepage or obstruct areas from inspection.
- Condition of surface drainage facilities and their ability to prevent erosion or ponding.
- 9. Any erosion of cap areas.
- 10. Any erosion of support levee slopes and/or loss of protection ground cover.
- Any sink holes on capped areas that would indicate collapse of void spaces.
- 12. Any sink holes in active waste placement areas that would indicate collapse of void spaces.
- 13. Any irregularity or malfunction that would indicate any violation of environmental regulations or RES (LF policies.



Page I SWP-1207

## PROCEDURE

The inspection will be made by the Lancfill Supervisor or his designee as follows:

- Once each week and after storms where more than three inches of rainfall are experienced in a day, the landfill will be inspected.
- The items listed above will be inspected and the proper notations made on the attached inspection form.
- 3. If any irregularities are observed, the exact condition and location will be described in the remarks section.
- 4. Corrective action will be initiated immediately and so noted in the remarks section.
- 5. When the corrective action is complete, the date of completion will be noted on the inspection form. The Supervisor will sign the inspection form verifying completion of the corrective action.
- 6. The inspector will note the date and time of the inspection and forward the completed inspection form to the Operations Secretary for inclusion in the Inspection Log.

## LANDFILL INSPECTION RES (LA) INC.

DATE_		
1.	Crests, Slopes, Abutment and Toe Areas of Run-on/Run-off	
	!Diking OK	
_		
2	No Depression, Sink Holes, Etc.	
		•
3.	No Movement of Slopes. Slides. Bulges, Etc.	
_		
<u>L</u>	No Erosion by Surface Run-off, Seepage, Etc.	
5	No Seepage or Boils on Downstreams Slopes, Toe Areas, Etc. !	
		•
6	No Damp Areas on Slopes, Toe Areas, Etc.	<del></del>
7.	No Animal Burrows, Trees or Bush Growth that Could	
	Weaken Dikes. Liners. Etc.	
8	Surface Drainage Systems OK, No Erosion or Ponding	
		·
ċ.	Can Areas OK, Cover OK, No Erosion or Sink Holes	
10.	Support Levees OK. Cover OK. No Erosion or Sink Roles !	
11.	No Sink Holes in Waste Placement Areas	
12.	No Ponding or Liquid Accumulation in Waste Placement Areas	
13.	No Other Irregularities or Malfunctions	
14.	No Empty Containers Observed	
	!	
15.	No Containers Eolding Liquids Observed	
16.	Dust and Airborne Particulate Controls OK	
17.	No Fumes or Vapor Emissions-Observed	
מאבת.	RKS (INCLUDING CORRECTIVE ACTION):	<u> </u>
		<del></del>
		· <del></del> ·
<del></del>		

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EXHIBIT J-6

LEAK DETECTION SYSTEM SWP-1208

Exhibit I-2-14

Leak Detection Systems

Operation, Inspection,

Monitoring, Sampling and Report

SWP-1208

PROCEDURE:

Leak Detection Systems - Operation, Inspection,

Monitoring, Sampling and Report

PROCEDURE NO:

SWP - 1208

DATE ISSUED:

June 30, 1987

PURPOSE:

To insure proper inspection of the leak detection systems of the landfills and mixing facilities so that potential problems can be identified and corrected in timely fashion to prevent harm to human health or the environment, and to provide documentation for review and followup.

DISCUSSION:

Following are excerpts from regulations dealing with leak detection systems in landfills.

Landfills, surface impoundments and waste piles are required to design, construct and implement a leak detection system capable of defecting leakage of hazardous constituents at the earliest practicable time over all areas likely to be exposed to waste and leachate during the active life and post closure care period of the unit.

RESPONSIBILITY:

An employee designated by management is responsible for the operation, monitoring, sampling and reporting of the leak detection systems. He is responsible for conducting inspections at least weekly to insure the system is functioning properly, to record the accumulation rate, if any, of liquids in the system, to evaluate the system recording the volume removed and to report any irregularities observed to Supervision so that corrective action can be initiated.

The Supervisor is responsible for training the employee in the operation and inspection of the system, reviewing inspection reports, initiating corrective action, and following up as often as necessary to ensure compliance.

### GENERAL RULES:

- Each leak detection system will be equipped with a pump capable of evacuating liquids from the system and for obtaining samples for analytical testing.
- Each system will have a means of measuring liquid levels and volumes removed.

PROCEDURE SWP 1208 cont'd.

Page 2 General Rules, cont'd.

> Associated piping will be provided to allow containment, if necessary, of liquids removed from the system.

## PROCEDURE:

- All leak detection systems and associated piping will be visually inspected weekly to
  - a) Check all piping, valves, fittings, etc. for leakage, and
  - b) check around each system for evidence of damage or leakage to the wells, casings, pumps, piping, etc.,
- The following tasks will be performed and recorded on the leak detection inspection report for each system:
  - a) Record the level, if any, of accumulating liquids in the system,
  - b) activate the pumping system to remove any liquids (remove a minimum of 3 well volumes or until the system is dry, whichever occurs first),
  - c) record volume of liquid removed, noting the liquid clarity, odor, etc.,
  - d) record liquid level before and after pumping,
  - e) note that the pump system and associated piping are functioning properly,
  - f) note any deterioration, damage, or irregularity observed in the system and associated piping so that corrective action can be initiated.

PROCEDURE SWP 1208 cont'd.

Page 3 PROCEDURE, cont'd.

3. At least once a quarter, during the weekly inspection, samples will be obtained of the liquids removed for analytical testing. The samples will be tested for volatile organic compounds (EPA Method 624). These results will be reported to Supervision for review and evaluation.

LEAK DETECTION WELLS WEEKLY INSPE INSPECTED BY:

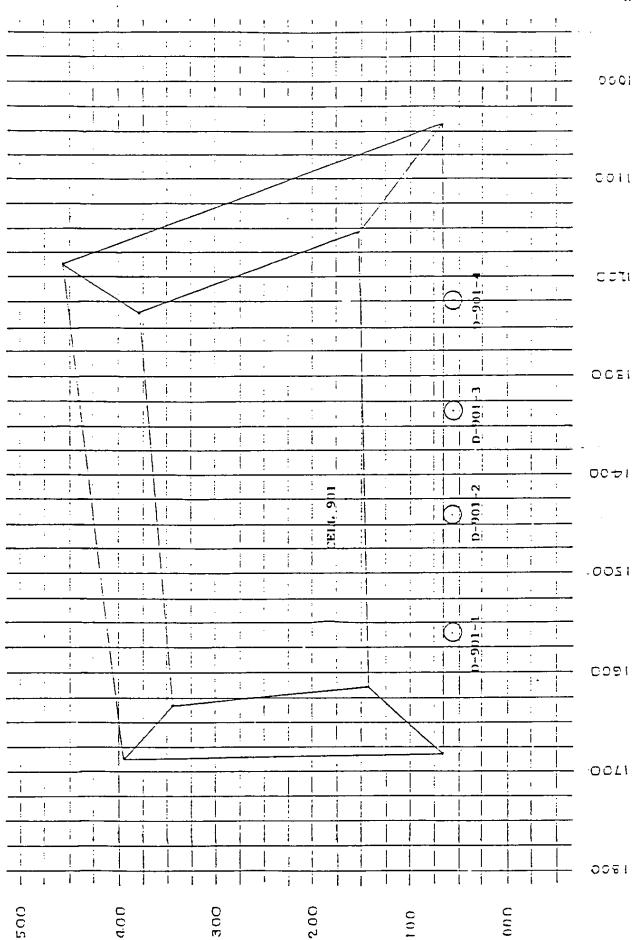
Y REPORT ATE:

LANDFILL CELL 717

				RISER	SAMPLE	:plbing	: SOMPLE :PIPING ::
	••	 H. L.	: GALLONS :	DRY	: TAKEN	: URL VES	
SYSTEM NO.	TIME	 FI.	: PUMPED	X/X	N	:CONDITION	PROBLEMS AND CORRECTIVE ACTION:
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W. L. = MATER LEVEL BELOW TOP OF CASING M. R. = METER READING Y = YES N = NO MOTES:



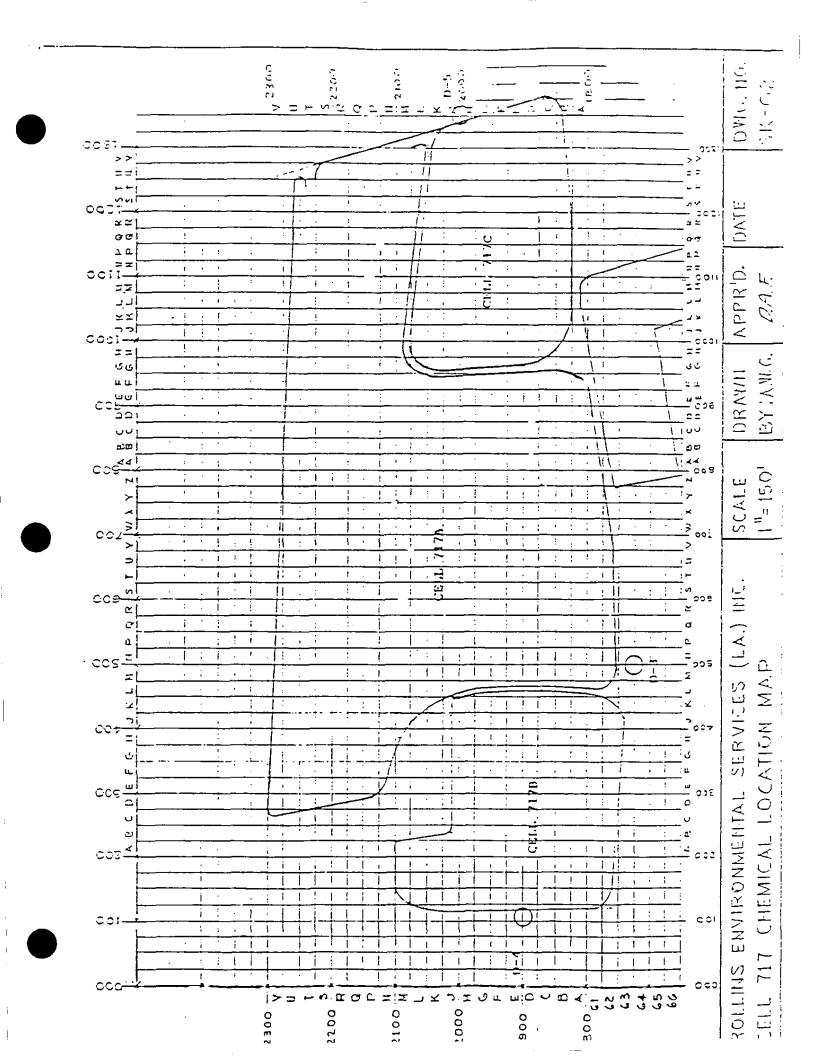


EXHIBIT J-7

OPERATING EQUIPMENT INSPECTION SCHEDULE SP1-005-01

Exhibit I-2-15

Operating Equipment Inspection Schedule

SPI-005-01

## STANDARD PRACTICE INSTRUCTIONS

TITLE:

OPERATING EQUIPMENT

INSPECTION SCHEDULE

SPI #: 005-01

AUTHOR:

R. Ellisor

DATE: 6/30/87

### I. INTRODUCTION:

Operating equipment used in hazardous waste management at the RES(LA) facility includes forklifts, dump trucks, tractors, tankers, flatbed trailers, pick-up trucks, vacuum trucks and landfill equipment. RES(LA) forklifts are used to unload waste shipments and transfer them to the appropriate areas for storage or disposal. Tank trailers, dump, flatbed and pick-up trucks are used to transport wastes to various areas of the plant. The vacuum trucks are used to gulp wastes from their containers or sumps and transfer them to the tank farm or other unloading and incineration areas. The landfilling equipment remains in the landfill area and is used to landfill, stabilize wastes and place the wastes in the landfill. The procedure describes the inspection of RES(LA) operating equipment.

#### II. SAFETY:

The inspection program instituted at RES(LA) is used to identify any equipment malfunctions, that may cause or may lead to release of hazardous waste constituents to the environment and threat to human health. RES(LA) conducts inspections on a regular (monthly) schedule to identify problems or potential problem and allow them to be corrected before they cause harm to human health or the environment.

		<u> </u>	
APPROVED:Operations Mar	ager Joko (C	ê-harde	DATE: 6-30-87
APPROVED:Maintenance Ma	nager Jugo Te	Hem	DATE: 6-30-5]
APPROVED:Safety Manager	Surella	made	DATE: 6-30-87
APPROVED:Technical Mana	ger MMCOM	MM	DATE: 6-30-57
APPROVED:Plant Manager	- Phone Brim	eth	DATE: 6 25/67

TITLE:

OPERATING EQUIPMENT

INSPECTION SCHEDULE

SPI #: 005-01

REV #:

DATE:

## III. PROCEDURES:

- A. Sussex Contractors, Inc. will maintain all RES(LA) vehicles on a regular schedule plus a monthly preventative maintenance program. Repair and P.M. records will be kept by Sussex and forwarded to RES(LA) Maintenance Manager no later than the fifth working day of the following month. Sussex will provide all maintenance on RES(LA) operating equipment, as follows:
  - Plant vehicles (pick-up trucks)
  - Plant gulper (vacuum trucks)
  - 3. Plant tractors and tankers
  - 4. Forklifts
  - 5. Heavy equipment (landfill)
  - 6. Stand-by generator
  - 7. Emergency fire pump (diesel)
  - 8. Fire truck
- B. Repair Orders

Records of all repairs using the vehicle unit number and date of repair will enable the Maintenance Manager to monitor the frequency of malfunctions of any type.

C. Preventative Maintenance Inspections

Sussex will, once a month, preform a P.M. inspection on all RES(LA) operating equipment. Records and date of inspection will be kept by Sussex and forwarded to the Maintenance Manager RES(LA) by the fifth working day of the following month.

## MOFILE EDUIPMENT NUMBERING EYETEM

MORILE EQUIPMENT WILL BE MUMBERED IN LINE WITH THE STANDARD PLANT NUMBERING EYETEM AS FOLLOWS:

## 45,54

- OI INCINERATION
- OE INCINERATION SCRUBBER SYSTEM
- OS UNLOADING FACILITIES
- 04 MASTE LIGILD STORAGE SYSTEM
- OS BIG/WATER TREATMENT EYSTEM
- OS LANDFILL
- OF KIN BARN
- OB UTILITIES
- OF GENERAL PLANT

ALL MOBILE EQUIPMENT WILL RECEIVE A PREFIX OF "M" FOLLOWED BY A FOUR DIGIT NUMBER CORRESPONDING WITH THE AREAS DESIGNATED ABOVE

```
AREA 06 - LANDFILL
 M-6010
          RPS LANDFILL PUMP
 M-3020
          EMD WATER TRUCK
 M-5030
          FORD WATER TRUCK
MHEC40
          120 MOTOR GRADER
 M-6050
          D76 DIZER
M=c050
          DG DOZER
 M-5070
          DSD DODER
M-3080
          DAD DOZER
M-3090
        14 FIAT ALLIS DOZER
         DER DEZER
M-6100
 1-6110
        DER DOZER
 -6120
         DEE DOZER
        DEB DOZER
 71-5130
         D5B D0ZER
M-5140
M-6150
         DER DOZER
M-6160
         225 BACKHOE
          225 BACKHOE
M-6170
M-5180
        ROLLER #1
M-5190
         950 CAT LOADER
M-SECO
        FORD F-150 PICKUP
        FORD F-150 PICKUP
M-6210
       FORD F-150 PICKUP
M-6220
M-6230
         FORD F-150 PICKUP
M-6240
         FORD 2000
M-6250
         GATOR
AREA OF - GENERAL PLANT
M-9010
         EMC 8000 FIRE TRUCK
M-7020
         DODGE STREET SWEEFER
M-9030
         SROVE CHERRY FICKER
M-9040
         PORTABLE AIR COMPRESSOR
변-무의통이
         DASE TRADTOR
M-9060
         JUHN DEERE TRADTOR
M-7070
         BTANDHEY BENERATOR
<u>1</u>1-7080
         FIRE PUMP
 P090
         CAT FORKLIFT
m-9100
         BEDURITY PICKUP
M-7110
         GPERATIONS PICKUP
M-9120
         LAP FICKUP
MHF190
         THAT ITEMPHICE PICKUP
                                      I-2-106
四十号は40年
         DOMESTIC SEA
                                Revised July 1987
```

AREA O1 - INCINERATION

OPERATIONS FORKLIFT

OFERATIONS FORMLIFT

DRUM PAD FORKLIFT

DRUM PAD FORMLIFT

IN HOUSE TANKERS YTTT

AREA OR - LUALGADING FACILITIES

MACUM TRUCKS

LITTLE SULPER

70 TRUCK

1-2010

M-2020

M-3010

M-3030 M-3030

M-2040

M-2050

M-3050

Bussa, Contractors, Inc. F. D. Box 73904, Baton Rouge, LA 70507 Inspected by: \_\_\_\_\_ Fhone (504) 775-8165 Preventative Maintenance & Repair Record FOR: Rolling Environmenal Services, (LA) Inc. Operating Equipment \_\_\_\_\_ Delivery Date \_\_\_\_\_ Return Date Unit # \_\_\_\_\_ Type of Equipment \_\_\_\_\_ Model # \_\_\_\_ |Check/OK | DVERALL EQUIPMENT COMBITION (X/Froblem) Date (corrective action ( A. Fuel B. Damage hoses, lines or major leaks C. Broken wires or loose connections D. Missing parts, doors, & E. Structural or sheetmetal ರೆತಗಾತರತ F. Control levers properly marked 8. Condition of tire, wheel or tracks H. Instruction decals legible: I. Engine, transmission, & steering Load backrest (forkliets) ENGINE COMPARTMENT A. Dil Lavel B. Muffler & exhaust system C. Belts & pulleys D. Instrument Panel BATTERIES A. Fully charged B. Capable & clamp condition ! D. Battery hold down clamps HYDRAULIC SYSTEM A. Fluid lavel B. Damaged or scored cylinder! SAFETY A. Horn, lights & strobelight! B. Backup alarm C. Fire extinguisher D. Lifting capacity clearly marked 🚉 Main & parking brake 🦠 Valves & hoses s. Vacuum pumb TRUCKDRIVER H. Tanker (Tank)

ATTACHMENT K
OPERATING RECORD

# ATTACHMENT K

# OPERATING RECORD

# Table of Contents

I.	PURPOSE	
II.	FACILITY OPERATING RECORD	-

#### ATTACHMENT K

#### OPERATING RECORD

#### I. PURPOSE

The purpose of the Operating Record is to provide written documentation of environmental analytical results, waste disposed activities, inspections, training records, and copies of reports submitted to the LDEQ. The components of the Operating Record are presented below.

#### II. FACILITY OPERATING RECORD

The Permittee shall maintain at the facility until the end of the post-closure care period, a written record of waste, soil, decontamination wash water, and ground water analyses. The following information shall be recorded:

- The dates, exact place, and times of sampling or measurements;
- The individual who performed the sampling or measurements;
- The dates analyses were performed;
- The individuals who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

The Permittee shall maintain at this facility until the end of the post-closure care period, a written record of waste disposal activities. The following information shall be recorded:

- Waste description;
- Disposal date;
- Quantity disposed; and
- Disposal location.

The Permittee shall keep at the facility a written record of all inspections conducted in accordance with Permit Attachment J. These records shall be maintained for a minimum period of three (3) years from the date of the last action taken as a result of the inspection.

The Permittee shall keep at the facility, training documents and records as required by LAC 33:V.1515. Records of training shall be kept on all current employees and for three (3) years after an employee leaves the facility unless transferred within the company. Training records of transferred employees will be handled in accordance with company policy

The Permittee shall maintain at the facility, a copy of all annual reports submitted in accordance with LAC 33:V.1529.D. These copies shall be kept until the end of the post-closure care period.

The contact person for the Permittee during the post-closure care period will keep a record of all inspections, repairs, sampling, analysis results, and post-closure cost estimates. The record shall also contain the determination of significant increase calculations for the monitoring data and the annual determination of groundwater flow rate and direction.

# ATTACHMENT L LANDFILL CELL 717 CLOSURE AND POST-CLOSURE CARE PLAN



ESPEY, HUSTON & ASSOCIATES, INC.

Engineering & Environmental Consultants

Document No. 860962 EH&A Job No. 6612

LANDFILL CELL 717 REVISED INITIAL
CLOSURE AND POST-CLOSURE CARE PLAN
FOR ROLLINS ENVIRONMENTAL SERVICES (LA), INC.
BATON ROUGE, LOUISIANA

#### Prepared for:

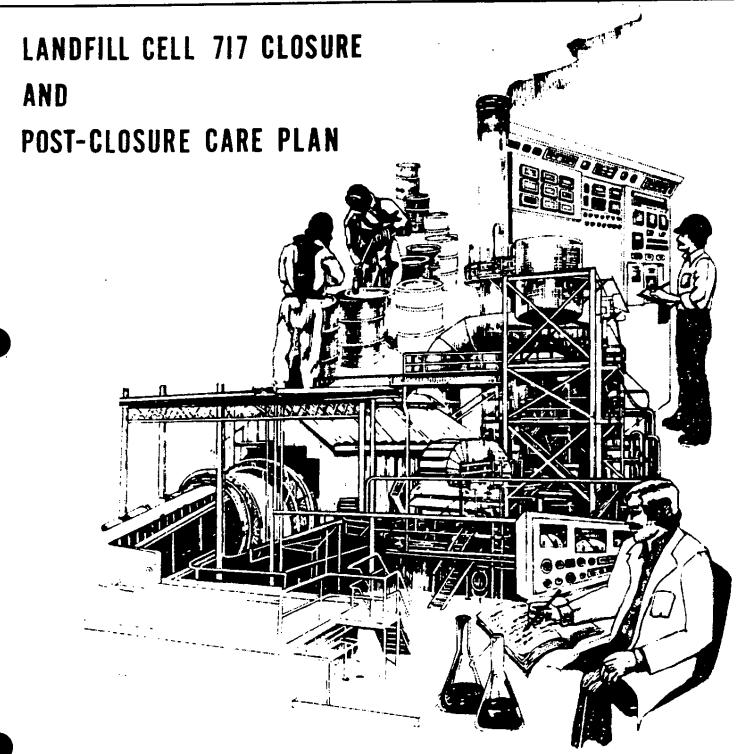
Rollins Environmental Services (LA), Inc. Baton Rouge, Louisiana 70807

Prepared by:

Espey, Huston & Associates, Inc. P.O. Box 519 Austin, Texas 78767

**April 1987** 

# - ROLLINS ENVIRONMENTAL SERVICES (LA), INC.



BATON ROUGE FACILITY

# ATTACHMENT L

# LANDFILL CELL 717 CLOSURE

# AND

# POST-CLOSURE CARE PLAN

# Table of Contents

I.	PURPOSE	1
II.	PLAN	1
	List of Exhibits	

Exhibit L-1 Landfill Cell 717 Closure and Post-Closure Care Plan

#### ATTACHMENT L

#### LANDFILL CELL 717 CLOSURE AND POST-CLOSURE CARE PLAN

#### I. PURPOSE

The purpose of the plan for RES(LA) was to identify steps necessary to perform closure of Landfill Cell 717 and what actions must be taken to provide maintenance and monitoring of the closed Landfill Cell 717 during the post-closure time period.

#### II. PLAN

RES(LA) prepared and submitted to LDEQ a closure and post-closure care plan for Landfill Cell 717. The plan was prepared in accordance with Subchapter VI of Chapter 23 of the Louisiana Hazardous Waste Regulations. A copy of the Plan is provided in Exhibit L-1.

RES(LA) is currently in the process of closing Landfill Cell 717. The closure of the Cell was authorized under Permit No. LAD 010 395 127-CP4.

EXHIBIT L-1

LANDFILL CELL 717 CLOSURE

AND

POST-CLOSURE CARE PLAN

# ESPEY, HUSTON & ASSOCIATES, INC.

# TABLE OF CONTENTS

Section	. •	Page
1.0	INTRODUCTION	1-1
2.0	FACILITY DESCRIPTION	2-1
2.1	CONTAINMENT SYSTEM	2-1
2.2	LEACHATE COLLECTION AND LEAK DETECTION SYSTEM	2-1
3.0	DISPOSED WASTES	3-1
4.0	CLOSURE PROCEDURES	4-1
4.1	FIELD VERIFICATION OF EXISTING CLAY LINER	4-1
4.2	CONSTRUCTION OF FINAL COVER	4-1
4.3	CONSTRUCTION OF DRAINAGE FACILITIES	4-4
4.4	SUBCELL D BELOW-GRADE AREA	4-4
4.4.1	Field and Laboratory Testing of Clay Cap	4-6
4.5	CLOSURE CERTIFICATION	4-7
5.0	POST CLOSURE CARE PLAN	5-1
5.1	OVERVIEW	5-1
5.2	POST CLOSURE CARE ACTIVITIES	5-1
5.3	INSPECTIONS	5 <b>-</b> 2
5.4 -	SITE MAINTENANCE	5-3
5.4.1	Maintenance of Landfill Cover	5-3
5.4.2	Maintenance of Perimeter Fence	5-3
5.4.3	Maintenance of Permanent Benchmarks	5 <b>-</b> 4
5.5	GROUNDWATER MONITORING SYSTEM	5-4
5.6	LEACHATE COLLECTION AND SYSTEM	5 <b>-4</b>
5.7	LEAK DETECTION SYSTEM	5-5
5.8	SITE SECURITY	5 <b>-</b> 6
5.9	FACILITY CONTACT	5 <b>-</b> 6
6.0	CLOSURE AND POST-CLOSURE CARE COST	6-1

#### TABLE OF CONTENTS (Concluded)

#### Appendices

APPENDIX A - COVER EROSION ANALYSES

APPENDIX B - COVER PERCOLATION RATE ANALYSES

APPENDIX C - COVER DRAINAGE SPECIFICATIONS

APPENDIX D - WASTE AND COVER VOLUME CALCULATIONS

### Exhibits

EXHIBIT 1 - LABORATORY REQUEST FORM
EXHIBIT 2 - PROCEDURES FOR LOCATING WASTES

#### 1.0 INTRODUCTION

Rollins Environmental Services (LA), Inc. (RES)(LA)) has prepared a revised initial closure and post-closure care plan for Landfill Cell 717. The general location of the RES(LA) site is immediately west of Scenic Highway 61 approximately three miles north of Baton Rouge, near the community of Alsen. Closure of Landfill Cell 717 basically involves design and construction of a cover system which:

- o provides long-term minimization of migration of rainfall through the closed landfill cell;
- o functions with minimum maintenance;
- o promotes drainage and minimizes erosion of the cover;
- o accommodates settling and subsidence so that the cover's integrity is maintained; and
- o has a permeability equal or less than the permeability of any bottom liner system or natural subsoils present.

Post-closure care of Landfill Cell 717 extends for a period of 30 years. Post-closure care activities include periodic inspections, site maintenance and security, leachate collection removal, and groundwater monitoring.

#### 2.0 FACILITY DESCRIPTION

Landfill Cell 717 is located on approximately 22.2 acres of land. This cell is bordered on the south by the Allied Tract (a future landfill), on the west by the Western Tract (a future landfill), on the southwest by Landfill Cell 901, on the east by the process area (see Dwg. 01). Landfill Cell 717 consists of four separate subcells (A, B, C, and D), as shown on Dwg. 05. All subcells, except the western portion of Subcell D, are constructed up to above-grade elevations (see Dwg. 02). The western portion of Subcell D is covered by a minimum of seven feet of clay rich soil at the natural grade elevations.

#### 2.1 CONTAINMENT SYSTEM

The containment system of Landfill Cell 717 consists of clay liners located at bottom and sidewalls of the cell. The liners consist of a minimum of 5 feet of recompacted clay (permeability < 1 x 10<sup>-7</sup> cm/sec). The natural grade elevations at this site average 80 feet. The below-grade portion of Subcell A has a maximum depth of 62 feet below natural grade while Subcells B, C, and D are 41, 34, and 47 feet in depth. In addition to the existing above-grade north waste containment dike, a dike is currently under construction on the south and south-west sides of Landfill Cell 717. The remaining above-grade portions of the waste are covered by clay rich soil (see Dwg. 02). As shown on the Site Topographical Map Dwg. 01, Landfill Cell 717 is currently extended to an elevation of approximately 120 feet.

#### 2.2 LEACHATE COLLECTION AND LEAK DETECTION SYSTEMS

The leachate collection and detection systems in Landfill Cell 717 are as depicted in Dwg. 19. The leachate collection systems within the subcells of Landfill Cell 717 vary. The following table summarizes the types of systems within Landfill Cell 717.

Leachate Collection System-Landfill Cell 717

Subcell (Dwg. 19)	# of <u>Standpipes</u>	Collector Type
A	3	System C
	11	System B
•	1	System D
В	2	System D
C	2	System A
D	4	System E

The collector types differ in lengths, and diameter from System A through System E. All collectors consist of a standpipe connected to a pipe that lies within a sand-filled area on the bottom of the landfill. The standpipes are equipped with submersible pumps (5-20 gpm, 1/2-1 1/2 HP) hooked up to electric motors with control boxes. The standpipes are 6 to 8-inch Schedule 40 PVC pipes cased in 12 to 24-inch diameter corrugated metal and/or carbon steel pipes. Systems A and E consist of sections of PVC pipe which extend from one standpipe center to the next standpipe center along the bottom of the landfill. Systems B and D consist of a 20-foot-long pipe extending from the center of the standpipe outward. Systems B and D are stationed near the toe of the landfill sidewalls. System C is used in the middle of Subcell A and is similar to System B and D except that in System C, two 20 foot pipes are extended outward from the standpipes in opposite directions. Systems A, B, C, D, and E piping at landfill bottom is wrapped in 4-ounce nonwoven black filter cloth.

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The system in Subcell D includes sand trenches which are 40 feet apart from center to center and 25 feet wide. The trenches extend 60 to 100 feet from the standpipes as shown on Dwg. 19. The bottom of Subcell D is sloped toward these trenches at 1%.

The leak detection system consists of six pipes placed as indicated in Dwg. 19. These pipes extend underneath the clay liner, along the landfill sidewalls

to an area at the base of the sidewalls. The leak detection pipes are 6 to 8 inches in diameter, cased in 12-inch diameter corrugated metal piping, and wrapped in 4-ounce nonwoven plastic filter cloth. The piping underneath the landfill clay liner lies in a gravel trench set in bentonite. The gravel is Grade A washed, No. 8 to 1 1/2 inch.

#### 3.0 DISPOSED WASTES

RES(LA) has adopted Louisiana Hazardous Waste Regulations (LHWR) Landfill Criteria in Chapter 14.2j as a guideline for final landfill disposal. Additional necessary tests as noted in Section A of the Laboratory Request Form, given in Exhibit 1, are performed. The results of these tests provide a determination by which RES(LA) can provide proper disposal, by immediate direct landfill or stabilization, solidification and disposal. Wastes that do not require flue dust for stabilization are directly landfilled. Waste that contain liquids but can be stabilized by using flue dust, lime dust or fly ash are processed for stabilization prior to final disposal. All waste that is sent to the landfill is logged with its respective position and elevation in the existing secure landfill on a daily basis, as indicated in Exhibit 2.

#### 4.0 CLOSURE PROCEDURES

RES(LA) is proposing to close Landfill Cell 717 as follows:

#### 4.1 FIELD VERIFICATION OF EXISTING CLAY LINER

Locations and elevations of the existing clay liner are shown on Dwgs. 05, 06, 07, and 08. The existing clay liner will be located as follows:

- o remove soil to expose the clay liner around Landfill Cell 717 and inspect the liner to ensure its existence.
- o scarify the liner to a depth of 6 inches.
- o check the liner elevation.
- o extend the liner as necessary to elevations specified on Dwgs. 06, 07, and 08.

The information made available in drawings listed in Table 4-1 was compiled to draw Dwgs. 05, 06, 07, and 08.

#### 4.2 CONSTRUCTION OF FINAL COVER

The final cover is designed to minimize erosion and percolation of liquid through the landfill. Refer to Appendices A and B for cover erosion and percolation rate analyses. The waste will be placed to elevations four (4) feet below the final cover elevations as shown on Dwgs. 03 and 04. The final cover will be constructed over the waste to a maximum elevation of 127 feet with a maximum slope of 3.5 percent. The cover will be tied-in to the existing clay liner as located following the

TABLE 4-1

LANDFILL CELL 717 REFERENCE DRAWINGS

Drawing No.	Drawing Title	Date
D-10-C-BR-003	Cell 717 Liner Tie-ins	7-5-83
D-10-C-BR-004	Cell 717 Liner	7-5-83
D-10-C-BR-011	Cell 717C Cross-sections	12-6-83
D-10-C-BR-012	Cell 717C Cross-sections	12-7-83
D-10-C-BR-52	Rollins Cross-sections of Cell 717A	12-3-81
D-10-C-BR-53	Rollins Cross-sections of Cell 717A	12-3-81
D-10-C-BR-54	Rollins Cross-sections of Cell 717A	12-3-81
D-10-C-BR-55	Rollins Cross-sections of Cell 717A	12-3-81
D-10-C-BR-56	Rollins Cross-sections of Cell 717A	12-3-81
D-10-C-BR-57	Cross-sectional Record of Excavation and Liner Placement in Cell 717-B	7-16-82
D-10-C-BR-062	Civil Plan Cell 717	7-24-84
D-10-C-BR-063	Civil Sections Cell 717	7-24-84
D-10-C-BR-064	Civil Section & Detail Cell 717	7-24-84
D-10-C-BR-066	Location of Waste Disposal	7-17-84
D-10-C-BR-067	Cross-sections of Cell 717D	7-11-84
D-10-C-BR-068	Cross-sections of Cell 717D	7-11-84
D-10-C-BR-069	Cross-sections of Cell 717D	
D-10-C-BR-070	Location of Waste Disposal	8-19-86
D-10-C-BR-071	Location of Waste Disposal	8-19-86

TABLE 4-1 (Concluded)

Drawing No.	Drawing Title	Date
D-10-C-BR-072	Cross-sections of Extension Cell 717D	4-29-85
D-10-C-BR-073	Cross-sections of Extension Cell 717D	4-29-85
D-10-C-BR-074	Cross-sections of Extension Cell 717D	4-29-85
D-10-C-BR-075	Miscellaneous Layout Details - Landfill 717	5-9-85
D-10-C-BR-076	Cell 717 Liner Cap	5-15-85
D-10-C-BR-077	Cell 717 Liner Cap	5-15-85
D-10-C-BR-078	Cell 717 Liner Cap	5-15-85

procedures outlined in Section 4.1 above. Landfill Cell 717, at closure, will contain a maximum of 1.9 million cubic yards of disposed waste (see Appendix D). The final cover consists of the following profile from the bottom up:

- o three (3) feet of recompacted clay with percent passing the No. 200 sieve greater than 30, the liquid limit greater than 30 and the plasticity index greater than 15 constructed to have a permeability equal or less than 1 x 10<sup>-7</sup> cm/sec;
- o Six inches of clean fill consisting of sandy loam soil;
- o Six inches of topsoil consisting of clay loam soil; and
- o grass cover.

1...

#### 4.3 CONSTRUCTION OF DRAINAGE FACILITIES

Drainage facilities are designed to control erosion and runoff from the final cover (see Dwgs. 09 through 19). A total of four (4) drainage channels will be constructed along the upper perimeter of the cover to collect and transport the surface runoff to drop chutes. Two drop chutes will be constructed one at northeast and one at south-west corner of Landfill Cell 717 to drop the runoff to ground level (see Dwg. 09). Refer to Appendix C for cover drainage specifications.

#### 4.4 SUBCELL D BELOW-GRADE AREA

This area has been covered, at the natural grade level, with a minimum of seven (7) feet of clay rich soil (see Dwgs. 02 and 04). This area will be closed as follows:

- 1. Permeability, Atterberg limit, and grain size tests will be performed on the selected samples to determine its permeability, liquid limits, plasticity index, and percent passing the No. 200 sieve.
- 2. If the test results indicate that the existing cover permeability is equal or less than  $1 \times 10^{-7}$  cm/sec, the percent passing the No. 200 sieve is greater than 30, the liquid limit is greater than 30, and the plasticity index is greater than 15 the following steps will be taken:
  - a. The existing cover will be graded to a maximum of two (2) percent toward the existing drainage channels; and
  - b. A minimum of six (6) inches of topsoil (clay loam) will be placed on the cover and it will be vegetated.
- 3. If the test results for the cover only fail to meet the required permeability, a minimum of three (3) feet of the existing cover will be recompacted to meet the required permeability and it will be graded to maximum of two (2) percent toward the existing drainage channels. A minimum of six (6) inches of topsoil will be then placed on the cover and it will be vegetated.
- 4. If the test results for the cover fail to meet both the required permeability and the soil specifications, a minimum of three (3) feet of compacted clay cover which meets the required specifications (permeability, Atterberg limit, and percent passing the No. 200 sieve) will be constructed over the existing cover and

it will be sloped to a maximum of two (2) percent toward the existing drainage channels. A minimum of six (6) inches of topsoil will be then placed over the compacted clay cover and it will be vegetated.

# 4.4.1 Field and Laboratory Testing of Clay Cap

Subcell D below-grade cover area is approximately 2 acres and has a cap constructed of compacted clay or clayey soils. The purpose of this investigation is to evaluate the adequacy of the clay cap by assessing whether its in situ vertical permeability is less than the required value of  $1 \times 10^{-7}$  cm/sec. A field investigation consisting of a minimum of 3 borehole permeability tests will be performed. The borehole tests will be conducted using the following procedure:

- (1) A hole several inches in diameter will be augered to a depth between 1 and 3 feet at each test location in the cap.
- (2) Casing will be placed in each hole and pushed slightly into the bottom to provide a seal. The casings will then be filled with water.
- (3) The permeability tests are conducted by measuring the drop in water level with time in each hole. Permeability can be calculated from the rate of infiltration into the cap.
- (4) Upon completion of the tests, all boreholes will be plugged and sealed with bentonite.

The borehole tests will be conducted by field personnel under the supervision of a registered professional engineer who will prepare a report assessing the adequacy of the cap based on the results of the tests.

In addition to performing field permeability tests, samples will be collected for laboratory permeability tests. Fifteen (15) borings will be advanced to a minimum depth of 3 feet into the clay cap. Relatively undisturbed samples will be obtained with 3-inch diameter thin-walled Shelby tubes which will be pushed into the soil. Samples will be extruded in the field, wrapped to prevent moisture loss, and transported to a geotechnical laboratory in such a manner as to avoid sample disturbance. Upon completion of the drilling activities, the boreholes will be plugged and sealed with bentonite. Atterberg limits, grain-size analyses, density and moisture content determinations, moisture-density relationships, and laboratory permeability tests will be performed on a representative number of soil samples.

#### 4.5 CLOSURE CERTIFICATION

Upon completion of closure, RES(LA) will submit to the Louisiana Department of Environmental Quality, certification both by the owner or operator and by an independent Registered Professional Engineer stating that Landfill Cell 717 is closed in accordance with the approved closure plan.

#### 5.0 POST CLOSURE CARE PLAN

#### 5.1 OVERVIEW

The post closure plan for Landfill Cell 717 is designed to provide maintenance and monitoring of the site in an environmentally sound and technically feasible manner, in accordance with all State of Louisiana and federal regulations pertaining to post closure care of hazardous waste disposal facilities.

The post closure care period of Landfill Cell 717 is anticipated to continue for 30 years following final closure. Reduction of the post closure care period by the Administrative Authority may occur if leachate or groundwater monitoring results, waste characterization work, application of advanced technology or alternate disposal, treatment or recovery techniques indicate that the facility is secure and the reduced period is sufficient to protect human health and the environment. Alternatively, the Administrative Authority may extend the post closure care period if leachate or groundwater monitoring results indicate a potential for waste migration at levels which may be harmful to human health or the environment.

No post closure use of the site of Landfill Cell 717 which will disturb the integrity of the final cover or containment system will be allowed, unless, as stated in Section 19.11c), the Administrative Authority finds that the disturbance is necessary to the proposed use of the property and will not increase the potential hazard to human health or the environment, or is necessary to reduce a threat to human health or the environment.

#### 5.2 POST CLOSURE CARE ACTIVITIES

The post closure plan for Landfill Cell 717 is designed to comply with all post closure requirements contained in Section 19.10 through 19.14, including

maintenance and monitoring throughout the post closure care period. The post closure plan is also designed to satisfy the post closure care requirements for landfills contained in Chapter 14. Post closure responsibilities include site inspections, site security, maintenance of final cover, surveyed benchmarks, and leak detection system, operation of the leachate collection and removal system and maintenance and monitoring of the groundwater monitoring system in accordance with the requirements stipulated in Chapter 18.

#### 5.3 INSPECTIONS

Thorough inspections of the site will be made by qualified RES(LA) technical personnel on a quarterly basis for the duration of the post closure care period. The inspections will determine the need for and extent of maintenance or other corrective measures required. Inspections will also be performed after any major rainfall event measuring more than five inches in a 24-hour period. The Landfill Cell 717 cover system will be inspected for evidence of erosion or washout, seepage, burrowing animals, rooting of trees, and any other circumstance impacting the integrity of the final cover. The security system surrounding the landfill cell will be inspected to identify holes or breaks in the chain link or barbed wire fences, to test the condition of gates and locking devices and to assess the condition of perimeter warning signs. The groundwater monitoring system will be inspected for signs of casing failure and well contamination at the surface through visual examination of each monitoring well. Perimeter dikes and interior drainage ditches and runoff control structures will be inspected to ensure that adequate control of onsite drainage exists. Semi-annual inspections will be made of the leachate collection and treatment system for breaks, clogs or leaks in the leachate extraction and removal standpipes, the main leachate extraction pipe and the piping to the leachate tank. The leachate extraction pumps and all treatment system components will be inspected for signs of wear or operational malfunctions. inspection forms will be submitted to the Closure Coordinator who will recommend and schedule on those items requiring attention.

#### 5.4 SITE MAINTENANCE

#### 5.4.1 Maintenance of Landfill Cover

The integrity of the final cover system for Landfill Cell 717 will be maintained throughout the post closure care period through a comprehensive inspection and maintenance program. The ground cover vegetation over the site area will be maintained by mowing twice yearly. The mowing schedule should prevent the growth of weeds or rooting of brush species that may undermine the integrity of the final cover. Any areas which have become devoid of top soil will be recovered and revegetated. In areas where grass cover has declined to 80% or less, application of commercial fertilizers and seeding of appropriate grasses will be administered.

The cover of the landfill will be inspected on a quarterly basis and also following any major rainfall events for the duration of the post closure care period. Following an evaluation of the inspection reports, the Closure Coordinator will schedule maintenance or repair within one month following inspection. The vegetation and grade will be checked during inspections. Any significant depressions or gullies which develop will be promptly repaired. If erosion has progressed through the topsoil into the clay fill, the cover will be repaired to the same specification as the original construction.

#### 5.4.2 Maintenance of Perimeter Fence

Evaluation of the condition of the perimeter fence surrounding the site will be made during each quarterly inspection. These inspections will be conducted to identify any holes or breaks in the chain link or barbed wire fences, to test the condition of gates and locking devices and to assess the condition of perimeter warning signs. The need to replace the entire fence by the end of the 30-year post closure period is anticipated.

#### 5.4.3 Maintenance of Permanent Benchmarks

Benchmarks used as reference for the survey plot identifying the location and dimension of Landfill Cell 717 will be maintained throughout the post closure care period. The benchmarks are permanently surveyed markers, such as iron pins, used in conventional surveying. The condition of the benchmarks will be noted during each quarterly inspection of the site. Once every five years, or during any general inspection which reveals damage, the validity of the benchmarks will be verified by a registered public surveyor.

#### 5.5 GROUNDWATER MONITORING SYSTEM

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RES(LA) will operate and maintain the groundwater monitoring system in accordance with the requirements of Chapter 18 during the closure and post closure care period of Landfill Cell 717. Inspection of all components of the groundwater monitoring system will be made on a quarterly basis throughout the post closure care period. Visual inspections of the well casings and caps will be made for signs of failure. Any repairs necessary will be made, but in the event of irreparable casing damage or failure, the well will be plugged using approved abandonment techniques, such as plugging the well bore with cement. In this event, a new replacement well will be installed in accordance with appropriated LDEQ's regulations and requirements.

Post-closure groundwater monitoring will be conducted in accordance with the Groundwater Sampling and Analysis Plan as specified in Section VI of the RES(LA) RCRA Part B Permit Application.

#### 5.6 LEACHATE COLLECTION AND REMOVAL SYSTEM

The leachate collection and removal system for Landfill Cell 717 will continue to be in operation for the duration of the post closure care period until leachate is no longer detectable. Landfill Cell 717 leachate collection system riser pipes are equipped with a submersible extraction pump and automatic level controls

or timers to activate the pump. These pumps discharge into a manifold system that transports the leachate to a collection tank for treatment. RES(LA) will record the pumping time for each leachate collection system. A log will be maintained on the system operation. Leachate levels in each leachate collection system will be measured to verify the effectiveness of the system.

At least semi-annually, all pumps, piping, wiring, etc. will be removed from each riser pipe for inspection, maintenance, and repairs, if necessary. At this time, the bottom elevation of each leachate collection system will be measured and compared to "as built" conditions to confirm the integrity of the pipe assembly.

Samples will be obtained from the leachate collection system once a year. Composite samples will be made for each of the four subcells of the Landfill Cell 717. These samples will be analyzed for volatile organic compounds using U.S. EPA and/or LDEQ approved techniques.

RES(LA) will prepare and submit an annual report summarizing all data collected, the system performance, repairs required, etc. In addition, any major malfunction of the system, such as a collapsed riser pipe or severe structural damage, will be reported to the LDEQ within seven working days after discovery. Normal maintenance problems with the pump, wiring, discharge piping, level controls, timers, etc. will not be considered a major malfunction.

#### 5.7 LEAK DETECTION SYSTEM

The leak detection system installed beneath the recompacted clay liners of Landfill Cell 717 will continue to operate throughout the post closure care period.

RES(LA) will sample each leak detection system on a quarterly basis. Prior to sampling, a minimum of three well volumes will be pumped or until the leak detection system pumps dry, whichever occurs first. Water level measurements will

be taken before and after pumping. The water in the system will then be allowed to stabilize back to static level or until sufficient water level is attained to recover samples where stabilized levels are not practical to attain. Approximately 20 gallons of leachate will be pumped from the system and the samples will be taken for analytical testing. The samples will be tested for volatile organic compounds using USEPA and/or LDEQ approved techniques.

RES(LA) will prepare and submit a quarterly report summarizing the results of the analytical and pump test data. Any major problems discovered in the Leak Detection System during the sampling and pumping, such as collapsed riser pipes or severe structural damage will be reported to the LDEQ within seven working days. Normal maintenance problems with the pump, wiring, discharge piping, etc. will not be considered a major malfunction.

#### 5.8 SITE SECURITY

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Site security will be maintained throughout the 30-year post closure care period. After completion of closure activities, access to the site by the public or domestic livestock will be restricted by chain link and barbed wire perimeter fencing and warning signs. Security devices will be maintained to prevent unauthorized entry to the site. Monitoring well caps will be kept locked in place to prevent tampering.

#### 5.9 FACILITY CONTACT

The facility contact during the post closure period is as follows:

President
Rollins Environmental Services (LA), Inc.
Baton Rouge, Louisiana 70807

# 6.0 CLOSURE AND POST-CLOSURE CARE COST

Financial instruments are presently on file with the LDEQ covering closure and post-closure care cost for Landfill Cell 717.

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APPENDIX A

COVER EROSION ANALYSES

#### LANDFILL COVER EROSION ANALYSES

#### Given:

Cover length of run is 280 feet over 3.5 percent slope and 130 feet over average slope of 38.5 percent.

#### Soil Loss Equation:

A = (R)(K)(LS)(C)(P)

A = soil loss, tons/acre/year

R = rainfall factor = 500 for Baton Rouge

K = soil erodability factor = 0.32 for clay

LS = length and slope factor = 0.51 for 3.5% slope over 280 feet

and 13.6 for 38.5% over 130 feet

C = cropping management factor = 0.003, no appreciable canopy

and 95%-100% grass cover

P = Erosion-Control Practice factor = 1.0, no contour farming

#### Soil Loss over 3.5 Percent Slope:

A = (500)(0.32)(0.51)(0.003)(1)

A = 0.24 tons/acre/year

#### Soil Loss in Inches per Year over 3.5 Percent Slope:

 $(0.24 \text{ tons/acre/year})(2,000 \text{ lbs/ton})/(110 \text{ lbs/ft}^3)/(43,560 \text{ ft}^2/\text{acre})(12 \text{ in/ft})$ = 0.001 in/year

#### Soil Loss over 38.5 Percent Slope:

A = (500)(0.32)(13.6)(0.003)(1)

A = 6.53 tons/acre/year

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# Soil Loss in Inches per Year over 38.5 Percent Slope:

 $(6.53 \text{ tons/acre/year})(2,000 \text{ lbs/ton})/(110 \text{ lbs/ft}^3)/(43,560 \text{ ft}^2/\text{acre})(12 \text{ in/ft})$ = 0.033 in/year

#### References:

- (1) Forth, Henry D., Fundamental of Soil Science, 1987.
- (2) U.S.D.A., Soil Conservation Service, Erosion Handbook, July 1984.

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### APPENDIX B

COVER PERCOLATION RATE ANALYSES

### Percolation Calculations

The method used to evaluate the percolation through the Landfill Cell 717 cover system involved developing a computer program which incorporated Thornthwaite's Method for calculating evapotranspiration, a percentage of the mean saturated hydraulic conductivity of the landfill cover, consideration of the cover system storage capacity, and simulation of the losses due to evapotranspiration at the cover surface including the clay/topsoil boundary. The output for a one foot topsoil and three feet clay layer cover system is attached (Table B). This system yields a maximum monthly percolation through the cover system of .503 mm. For Landfill Cell 717, with a surface area of approximately 871,200 square feet, this would mean a leachate production rate of 358 gal/day.

### The computer simulation consisted of:

- Inputting topsoil and clay data (depth, porosity, hydraulic conductivity), temperature and precipitation data, and latitude information.
- 2. Averaging the mean monthly maximum and minimum temperatures from climatological data to obtain an approximate monthly mean (AVGT).
- 3. Estimating potential percolation values through topsoil and clay based on hydraulic conductivity values.
- 4. Calculating monthly heat indices based on monthly mean temperatures and summing these indices to find an annual heat index (HEAT I).

5. Using HEAT I and AVGT to obtain an unadjusted evapotranspiration rate,

 $EVAP = 16 \times (10 \times AVGT/HEAT I)^{A}$ 

where

 $A = (.675 \times (HEAT I)^3 - 77.1 \times (HEAT I)^2 + 17920 \times HEAT I + 492390) \times 10 - 6$ 

- 6. Adjusting EVAP by a correction factor obtained from seasonal variations in intensity and duration of sunlight based on latitude information.
- 7. Adjusting precipitation data with respect to evapotranspiration amounts (P-PE).
- 8. Assuming the amount of moisture storage in the topsoil or clay layers when the layers in question are at field capacity (OLD STORAGE = FIELD CAPACITY = f (porosity and depth)). It should also be noted that storage losses or gains accumulate month-bymonth. Storage values in excess of the assumed available storage are not possible. This step also involves using Thornthwaite's Method for estimating water deficits and surpluses. For example when the adjusted precipitation for a month is < 0 (more evapotranspirates than rainfall), the storage for a layer is calculated as follows:

Storage = (previous months storage) x ((P-PE)/(FLDCAP))

9. The storage change in the cover layers is determined by finding the difference in storage from month to month. A negative change

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indicates periods when moisture was used to make up for deficit rainfall. A positive change represents absorption of excess precipitation by layers.

- 10. Evapotranspiration calculation adjustments are made with regard to storage changes in layers.
- 11. Moisture deficit or surplus values are determined for each month.
- 12. Potential percolation values are compared to surplus moisture content.
- 13. Runoff is determined by noting surplus values which did not percolate or evapotranspirate.

### References:

- Overcash, Michael Ray and Pal, Dhiraj, Design of Land Treatment
  Systems for Industrial Wastes-Theory and Practice, Ann Arbor
  Science, 1979, pp. 123-124.
- (2) Guhl, Gary, Gosselink, Leila and Miskell, Robin, A Computer Solution for the Estimation of Surface Runoff from an Ungaged Area by the Thornthwaite Water Balance Method, in prep.
- (3) Evaluating Cover Systems for Solid and Hazardous Waste, EPA, SW-867, September 1982.

TABLE B

# PERCOLATION DATA FROM COMPUTER OUTPUT

| Topsoil Porceity = 0.453 | Clay Porosity = 0.226 | Topsoil Depth = 1.00 ft | Clay Depth = 3.00 ft | Topsoil Hydraulic Conductivity = 0.000059000 cm/sec | Clay Hydraulic Conductivity = 0.000000078 cm/sec

Month	r	ĮT.	Σ	∢	Σ	٠,	<b>.</b>	<	w	0	Z	Q	Annual
Percolation Topsoil	100	105	72	61	0	0	0	0	0	0	٥	28	420
Percolation Clay	0.503	0.503	0.503	0.503	000.0	0.000	0.000	0.000	000.0	0.000	0.000	0.503	2.514
Potential Evapotranspiration	16	12	45	81	126	162	180	166	128	73	34	20	1052
Precipitation	116	126	117	142	122	79	180	128	112	29	100	127	1416
Precipitation - Potential Evapotranspiration	100	105	72	19	7	-83	0	-38	-16	9	99	107	
Topsoil Storage Capacity	138	138	138	138	134	73	73	55	49	41	113	138	
Clay Storage Capacity	902	902	902	902	902	902	902	902	206	902	206	902	
Storage Change (Topsoil)	0	0	0	0	7	-61	•	-18	9	2-	99	52	
Storage Change (Clay)	0	0	0	0	0	0	0	0	0	0	0	0	
Actual Evapotranspiration (Topsoil)	16.	21	45	81	126	140	180	146	118	69	34	20	966
Actual Evapotranspiration (Clay)	0	0	1	1	2	7	m	2	~	-	-	0	15
Deficit Topsoil	0	0	0	o	0	22	0	02	10	4	0	0	56
Deficit Clay	0	0	0	0	2	2	m	2	~3	-		0	13
Surplus Topsoil	100	105	72	61	0	0	0	0	0	0	0	28	420
Surplus Clay	100	105	72	61	0	٥	0	0	0	0	0	82	420
Runoff	0	0	0	0	0	0	0	0	0	0	0	0	0
Drainage	66	104	11	09	0	0	0	0	0	0	0	81	415

APPENDIX C
COVER DRAINAGE SPECIFICATIONS

### 1.0 INTRODUCTION

Landfill Cell 717, above-grade, disposal facility, will require protection of its containment embankments and top cover from erosion that could result from large rainfall events. In addition, the top cover of the landfill should be contoured such that sheet flow on the surface of the cover will cause minimal potential infiltration. These general requirements indicate the need for the design of the following specific drainage features:

- a. a contoured cover for the disposal area at 3.5% slope;
- b. lateral grass lined channels around the top of the disposal area to collect and transport the surface runoff to drop chutes;
- c. two chutes to drop the runoff to ground level;
- d. energy dissipation baffle blocks at the ground level; and
- e. embankment toe drainage channels to collect and transport uncontrolled runoff from slopes of the containment embankments.

Section 2.0 details the development of the rainfall depth-duration-frequency relationship for the site. The rainfall depth for the selected design frequency and critical duration is subsequently applied in the rational equation (Q = CIA) to compute stormwater runoff rates from the containment cover surface.

Section 3.0 presents the hydraulic design calculations for the disposal area lateral collection channels, drop structures and stilling basins, and embankment to channels.

### 2.0 GENERAL HYDROLOGY AND SELECTION OF DESIGN EVENTS

### 2.1 SITE DESCRIPTION

The general location of the RES (La) site is immediately west of Scenic Highway 61 approximately three miles north of Baton Rouge, near Alsen, approximately one mile inland and 30 feet above normal Mississippi River stage.

Landfill Cell 717 is located on a 22.2 acre tract of land. This cell is bordered on the south by the Allied Tract (a future landfill), on the west by the Western Tract (a future landfill), on the southwest by Landfill Cell 901, and on the east by the process area. The topography of the area is gently rolling with natural grade ranging from 76 feet to 80 feet across the site. The above grade portion of the landfill will rise to a maximum height of 127.0 feet. Natural drainage swales exist to the east, west, and south of the site which drain to Rainwater Basin No. 5.

### 2.2 RAINFALL FREQUENCIES

Although the drainage facilities for most projects are designed for storms with return periods of 25 years, the required long-term containment integrity of this facility dictate the use of a larger event than the 25-year. Accordingly, a 100-year return period was selected as the design return period for use in the drainage facility design.

Two publications of the National Weather Service, Technical Paper 40 "Rainfall Frequency Atlas for the United States," (Hershfield, 1961), and Hyrdo 35 "Five- to 60-Minute Precipitation Frequency for the Eastern and Central United States (National Oceanic and Atmospheric Administration, 1977) were used to determine rainfall depth-duration relationship for the project vicinity. These

rainfall depths are divided by the duration of the event to obtain the average rainfall intensity of the event. The resulting relationship is presented in Table 2-1.

### 2.3 PEAK RUNOFF RATES

[... ]...

For very small drainage areas of less than 400 acres, the Rational Method of analysis is commonly used to calculate peak rates of runoff. The Rational Method is usually expressed in terms of the following formula;

### Q = CIA

where Q is the peak rate of runoff in cfs; C is the runoff coefficient depending on the characteristics of the drainage area; I is the uniform rate of rainfall intensity in inches per hour for a duration equal to the time of concentration; and A is the drainage area in acres. The time of concentration is defined as the time which would be required for the surface runoff from remote parts of the drainage area to reach the point being considered. The rainfall intensity used in the computation is the average intensity for an event with a duration equal to the time of concentration. The values in Table 2-1 are interpolated as required to estimate intensities of storms for various durations from a log-frequency plot equal to the time of concentration. Times of concentration are calculated by computing the travel time from the most remote portion of the drainage area (with respect to time of travel) to the point at which flow is concentrated. In view of the degree of compaction and clay content of the cover on the landfill, a runoff coefficient of 0.85 has been selected for use in this design study.

The discharge for a typical area can be estimated by the rational formula with the time of concentration computed as being equal to sum of the overland flow time and the time of channelized flow. These flow times are computed by dividing the total flow length by the average velocity. Overland flow

TABLE 2-1

RAINFALL VOLUME AND INTENSITY FOR

EVENTS OF VARIOUS DURATION AND

100-YEAR RETURN PERIOD

Duration (minutes)	Rainfall Depth (inches)	Average Intensity (inches/hour)	Source
5	0.9	10.8	HYDRO-35
15	2.0	8.08	HYDRO-35
30	3.4	6.80	HYDRO-35
60	4.2	4.20	HYDRO-35, TP-40
120	5.5	2.75	TP-40
180	6.4	2.07	TP-40
360	8.0	1.33	TP-40
720	10.0	0.85	TP-40
1440	12.0	0.50	TP-40, LADEQ

estimated by using the relationship developed by the U.S. Soil Conservation Service (SCS) presented in Figure 2-1.

Since the landfill will be closed with a cover of topsoil and grass, the average overland flow velocity across the flow planes was estimated using the curve labeled "short grass pasture and lawns".

Table 2-2 summarizes the peak flow computations for all channels.

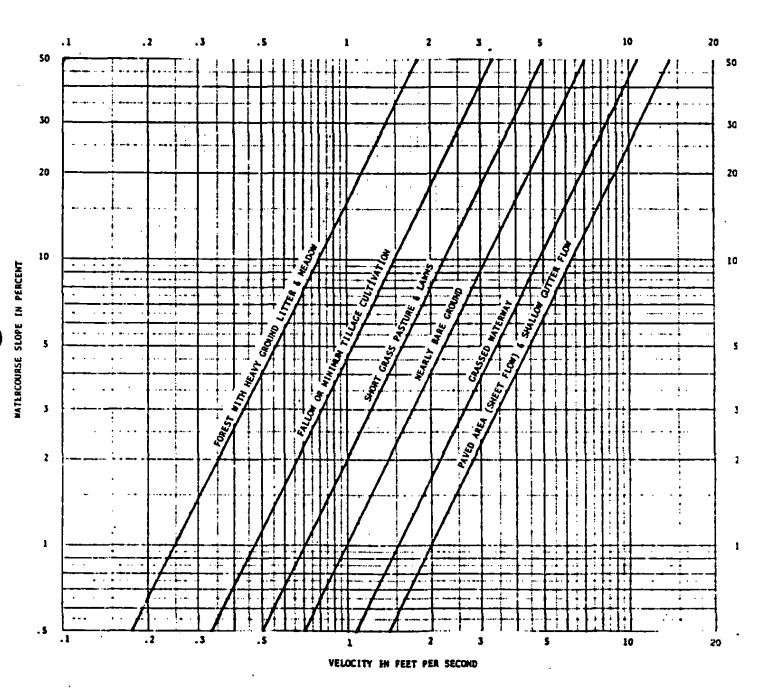


Figure 2-1.--Average velocities for estimating travel time for overland flow.

TABLE 2-2

SUMMARY OF CHANNEL PEAK FLOW CALCULATIONS

	O <sub>max</sub> (cfs)	0	24.0	39.7	0	8.8	20.0	0	15.0	19.4	0	7.9	6.92
	Intensity (in/hr)	,	9.1	8.0	1	10.4	4.4	ì	10.4	9.6	1	11.2	6.6
Time of**	Concentration (min)	•	11.3	15.9	ı	6.5	9.1	ı	6.5	9.3	1	3.7	8.3
	zed Flow Time*	,	5.86	10.45	ı	2.42	4.96	1	2.90	5.74	1	3.19	7.75
	Channelized Flow Length Time* (feet) (min)	,	703	1,254	1	290	595	t	348	299	1	383	006
	Time (min)		5.45	5.45	•	4.10	4.10	•	3,59	3.59	ì	0.51	0.51
Overland Flow	Average Velocity (ft/sec)		1.3	1.3	1	1.3	1.3	ı	1.3	1.3	•	1.3	1.3
Overlan	Slope (ft/ft)	1	0.035	0.035	ı	0.035	0.035	1	0.035	0.035	ı	0.035	0.035
:	1	ı	425	425	1	. 320	320	1	280	280	ı	40	40
	Drainage Area (acres)	0	3.10	5.84	0	0.99	2.42	0	1.70	2.38	0	0.83	3.20
	Station	00+0	7+03	12+54	00+0	2+90	2+62	00+0	3+48	29+9	00+0	3+83	00+6
	Chan- nel	¥			B			Ö			Q		

\*Channel flow velocity was assumed at 2.0 ft/sec. \*\*Time of concentration = channelized flow time + overland flow time.

### 3.0 HYDRAULIC DESIGN OF DRAINAGE FACILITIES

### 3.1 SURFACE COVER

A dome-type configuration will be constructed for the final cover to facilitate removal of rainfall excess collecting on the surface of the cover minimizing the potential infiltration. The layout consists of sloped planes as shown on Dwg. 09. The slope and length of the overland flow planes are designed to minimize erosion. A typical cross-section of the cover, as shown on Dwg. 04, consists of overland flow planes at a slope of 3.5%, and a length of less than 280 ft. Collection channels collect the runoff from these flow planes and are located at the perimeter of the landfill cover.

### 3.2 UPPER PERIMETER COLLECTION CHANNELS

The lateral collection channels were designed as grass-lined trapezoidal channels with 2.5:1 side slopes. Manning's equation was used to determine the velocity of the concentrated flow in these channels, and be written as:

$$v = \frac{1.49}{n} R.67 S_0.50$$

where V is the velocity of the flow in feet per second, n is Manning's friction factor, R is the hydraulic radius of the flow in feet, and S<sub>o</sub> is the bed slope. The hydraulics of the lateral collection channels were computed by using Mannings equation with n equal to 0.038. Because the selected design storm and resultant flow is relatively large, only minimum freeboard is maintained. Location, dimensions, and bed slope of all channels are shown on Dwgs. 09 through 13.

Table 3-1 summarizes the hydraulic calculations of all channels. Comparison of the maximum velocities with the allowable velocities in Table 3-2 indicate that the

TABLE 3-1

SUMMARY OF HYDRAULIC CALCULATIONS OF UPPER PERIMETER COLLECTION CHANNELS

A         0+00         15.0         116.5         117.2         0.002           7+03         8.0         115.1         117.2         0.002           12+54         2.5         114.0         117.2         0.002           B         0+00         7.8         116.0         117.2         0.003           C         0+00         7.7         115.1         117.2         0.003           C         0+00         7.7         116.0         117.2         0.003           B         3+48         3.2         115.1         117.2         0.003           C         0+00         15.0         114.3         117.2         0.003           D         0+00         15.0         116.5         117.2         0.003           D         0+00         15.0         116.5         117.2         0.003           D         0+00         15.0         116.5         117.2         0.002           B+83         10.9         115.7         117.2         0.002	Station	Bottom Width (feet)	Bottom Elevation Feet	Top Elevation Feet	Bed Slope (ft/ft)	Side Slope Hor:Ver	Q <sub>design</sub> (cfs)	Q * (cfs)	V max (ft/sec)
7+03       8.0       115.1       117.2         12+54       2.5       114.0       117.2         0+00       7.8       116.0       117.2         2+90       3.2       115.1       117.2         5+95       0       114.0       117.2         0+00       7.7       116.0       117.2         6+62       0       114.3       117.2         0+00       15.0       116.5       117.2         3+83       10.9       115.7       117.2	0+00	15.0	116.5	117.2	0.002	2.5:1	15.0	0	0
12+54       2.5       114.0       117.2         0+00       7.8       116.0       117.2         2+90       3.2       115.1       117.2         5+95       0       114.0       117.2         0+00       7.7       116.0       117.2         3+48       3.2       115.1       117.2         6+62       0       114.3       117.2         0+00       15.0       116.5       117.2         3+83       10.9       115.7       117.2	7+03	8.0	115.1	117.2	0.002	2.5:1	62.2	24.0	1.64
0+00       7.8       116.0       117.2         2+90       3.2       115.1       117.2         5+95       0       114.0       117.2         0+00       7.7       116.0       117.2         3+48       3.2       115.1       117.2         6+62       0       114.3       117.2         0+00       15.0       116.5       117.2         3+83       10.9       115.7       117.2	2+54	2.5	114.0	117.2	0.002	2.5:1	83.9	39.7	2.00
2+90       3.2       115.1       117.2         5+95       0       114.0       117.2         0+00       7.7       116.0       117.2         3+48       3.2       115.1       117.2         6+62       0       114.3       117.2         0+00       15.0       116.5       117.2         3+83       10.9       115.7       117.2	00+0	7.8	116.0	117.2	0.003	2.5:1	26.0	0	0
5+95       0       114.0       117.2         0+00       7.7       116.0       117.2         3+48       3.2       115.1       117.2         6+62       0       114.3       117.2         0+00       15.0       116.5       117.2         3+83       10.9       115.7       117.2	2+90	3.2	115.1	117.2	0.003	2.5:1	43.5	ø.	1.54
0+00     7.7     116.0     117.2       3+48     3.2     115.1     117.2       6+62     0     114.3     117.2       0+00     15.0     116.5     117.2       3+83     10.9     115.7     117.2	5+95	0	114.0	117.2	0.003	2.2:1	62.1	20.0	5.06
3+48       3.2       115.1       117.2         6+62       0       114.3       117.2         0+00       15.0       116.5       117.2         3+83       10.9       115.7       117.2	00+0	7.7	116.0	117.2	0.003	2.5:1	25.8	0	0
6+62     0     114.3     117.2       0+00     15.0     116.5     117.2       3+83     10.9     115.7     117.2	3+48	3.2	115.1	117.2	0.003	2,5:1	43.5	15.0	1.79
0+00 15.0 116.5 117.2 3+83 10.9 115.7 117.2	29+9	0	114.3	117.2	0.003	2.5:1	52.6	19.4	20.2
10.9 115.7 117.2	00+0	15.0	116.5	117.2	0.002	2.5:1	15.0	0	0
	3+83	10.9	115.7	117.2	0.002	2.5:1	45.4	7.9	1.26
9+00 3.9 114.3 117.2 0.002	00+6	3.9	114.3	117.2	0.002	2.5:1	79.3	56.9	1.78

\*Note: Q for each channel was obtained from Table 2-2.

TABLE 3-2

MAXIMUM PERMISSIBLE FLOW VELOCITIES

		Clear	water	porti	trans- ng col- nl silts
Material	n	V, fps	w. lb/ft*	V, fps	ਾਹ, lb/ft*
Fine sand, colloidal	0.020	1.50	0.027	2.50	0.075
Sandy loam, noncolloidal	0.020	1.75	0.037	2.50	0.075
Silt loam, noncolloidal	0.020	2.00	0.048	3.00	0.11
Alluvial silts, noncolloidal	0.020	2.00	0.048	3.50	0.15
Ordinary firm loam .	0.020	2.50	0.075	3.50	0.15
Volcanic ash	0.020	2.50	0.075	3.50	0.15
Stiff clay, very colloidal	0.025	3.75	0.26	5.00	0.46
Alluvial silts, colloidal	0.025	3.75	0.26	5.00	0.46
Shales and hardpans	0.025	6.00	0.67	6.00	0.67
Fine gravel	0.020	2.50	0.075	5.00	0.32
Graded loam to cobbles when noncolloidal	0.030	3.75	0.38	5.00	0.66
Graded silts to cobbles when colloidal	0.030	4.00	0.43	5.50	0.80
Coarse gravel, noncolloidal	0.025	4.00	0.30	6.00	0.67
Cobbles and shingles	0.035	5.00	0.91	5.50	1.10

<sup>\*</sup> The Fortier and Scobey values were recommended for use in 1926 by the Special Committee on Irrigation Research of the American Society of Civil Engineers.

From Chow, 1959, p. 165.

erosive velocities should not be a problem. Also, comparison of the peak rate run-offs (Q<sub>max</sub>) with design discharge capacities of collection channels indicate that the channels are adequately designed to collect and discharge the rainfall run-off from the cover.

### 3.3 DROP CHUTE

As shown in Dwg. 09, a southwest and northeast drop chute is used to convey the flow from the lateral collection channels to existing ground level at the project site. The locations of the chutes were selected in consideration of the construction of the landfill cover and the local drainage patterns outside of the project area. The storm water discharges from the drop chutes are toward natural drainage channels located just south and east of Landfill Cell 717. The water ultimately drains towards the RW-5 Basin. The hydraulic designs of the northeast and southwest drop chutes require the use of a 42" corrugated metal pipe for each drop chute.

The entrance to each drop chute possesses the following features: a sixinch thick concrete lining extending three feet into the channels to prevent erosion; a sump, approximately two feet in depth, designed to create an elevation head sufficient to pass water through the pipes; and headwalls to ensure the stability of the soil adjacent to the sump (see Dwgs. 14, 15 and 16).

### 3.4 ENERGY DISSIPATION

As the design discharge flows through the drop chutes, the conversion of 29 feet (southwest) and 34 feet (northeast) of elevation head into flow energy creates velocities at the end of the chutes of greater than 20 fps. This energy is dissipated by the collision of the water and three rows of baffle blocks (see Dwg. 17). The tailwater present at the bottom of the chutes also acts as an energy dissipation device by impeding the path of the water before it reaches the natural drainage channels.

### 4.0 REFERENCES

- (1) Chow, V. T. Open Channel Hydraulics. 1959. McGraw Hill Book Company. New York.
- (2) Environmental Protection Agency. 1976. Erosion and Sediment Control, Surface Mining in the Eastern U.S., Technology Transfer EPA -625/3-76-006.
- (3) Hershfield, D. M. 1961. Rainfall Frequency Atlas of the United States. Technical Paper No. 40. Weather Bureau. Department of Commerce. Washington, D.C.
- (4) National Oceanic and Atmospheric Administration. 1977. Hydro-35, Five- to 60-Minute Precipitation Frequency for the Eastern and Central United States. Silver Springs, MD.
- (5) Soil Conservation Service. November 1969. Interim Standard and Specifications for Grade Stabilization Structure Chute or Flume.
- (6) Soil Conservation Service. 1975. Urban Hydrology for Small Watersheds. Technical Release No. 55.
- (7) Soil Conservation Service. 1979. Grassed Waterway or Outlet. Standards and Specifications, Technical Guide, Section IV.
- (8) United States Bureau of Reclamation. 1977. Design of Small Dams. Department of the Interior. Washington, D.C.

### APPENDIX D

WASTE AND COVER VOLUME CALCULATIONS

### WASTE VOLUME CALCULATIONS

 $V = (1/3)(h)(A + B + (AB)^{1/2})$ 

h = height, ft

A = area of bottom of the cell, ft<sup>2</sup>

B = area of top of the cell, ft<sup>2</sup>

V = volume, ft<sup>3</sup>

### Below-Grade Cells:

### Cell A:

 $A = 240,371 \text{ ft}^2$ 

 $B = 420,133 \text{ ft}^2$ 

h = 55 ft

 $V = (1/3)(55)(240,371 + 420,133 + (240,371 \times 420,133)^{1/2})$ 

 $V = 17,935,312 \text{ ft}^3 = 664,270 \text{ yd}^3$ 

### Cell B:

 $A = 9,805 \text{ ft}^2$ 

 $B = 87,175 \text{ ft}^2$ 

h = 38 ft

V = 59,212 yd<sup>3</sup>

### Cell C:

 $A = 17,500 \text{ ft}^2$ 

 $B = 83,950 \text{ ft}^2$ 

h = 32.6 ft

 $V = 56,257 \text{ yd}^3$ 

 $A = 99,610 \text{ ft}^2$ 

 $B = 273,735 \text{ ft}^2$ 

h = 45 ft

 $v = 299,150 \text{ yd}^3$ 

Total below-grade = 1,079,000 yd<sup>3</sup>

### Above-Grade Cells:

### 80' - 113':

 $A = 967,032 \text{ ft}^2$ 

 $B = 596,772 \text{ ft}^2$ 

h = 33 ft

 $V = (1/3)(33)(967,032+596,772+(967,032 \times 596,772)^{\frac{1}{2}})$ 

 $V = 946,600 \text{ yd}^3$ 

### 113' - 123':

 $A = 596,772 \text{ ft}^2$ 

 $\mathbf{B} = \mathbf{0}$ 

h = 10 ft

 $v = 73,680 \text{ yd}^3$ 

### Waste Containment Dike Volume:

### 1) North Dike:

Length = 1,270 ft

Cross-sectional Area = 2,560.8 ft<sup>2</sup>

 $V = 2,560.8 \times 1,270 = 3,252,216 \text{ ft}^3 = 120,450 \text{ yd}^3$ 

### ESPEY, HUSTON & ASSOCIATES, INC.

2) South Dike:

Length = 1,070 ft.

Cross-sectional Area = 2,125.2 ft<sup>2</sup>

V = 84,220 yd<sup>3</sup>

Total dike volume = 204,670 yd<sup>3</sup>

Total above-grade waste volume:

946,600 + 73,680 - 204,670 = 815,610 yd<sup>3</sup>

Total cell waste volume = 1,895,000 yd<sup>3</sup>

NOTE: The waste volumes include the volume of any interim clay cover.

### COVER MATERIAL VOLUME CALCULATIONS

### Given:

Topsoil and Fill = 1 foot
Compacted Clay = 3 feet
Cover Area = 20 acres

Clay =  $(20 \text{ acres})(43,560 \text{ ft}^2/\text{acre})(3 \text{ ft})/(27 \text{ ft}^3/\text{yd}^3) = 96,800 \text{ yd}^3$ 

Topsoil and Fill =  $(20 \text{ acres})(43,560 \text{ ft}^2/\text{acre})(1 \text{ ft})/(27 \text{ ft}^3/\text{yd}^3) = 32,270 \text{ yd}^3$ 

EXHIBIT 1

LABORATORY REQUEST FORM

# ROLLINS ENVIRONMENTAL SERVICES (LA) INC. LABORATORY REQUEST FORM

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# EXHIBIT 2 PROCEDURES FOR LOCATING WASTES

### PROCEDURE FOR LOCATING CHEMICALS IN LANDCELLS

### Sequence of Events

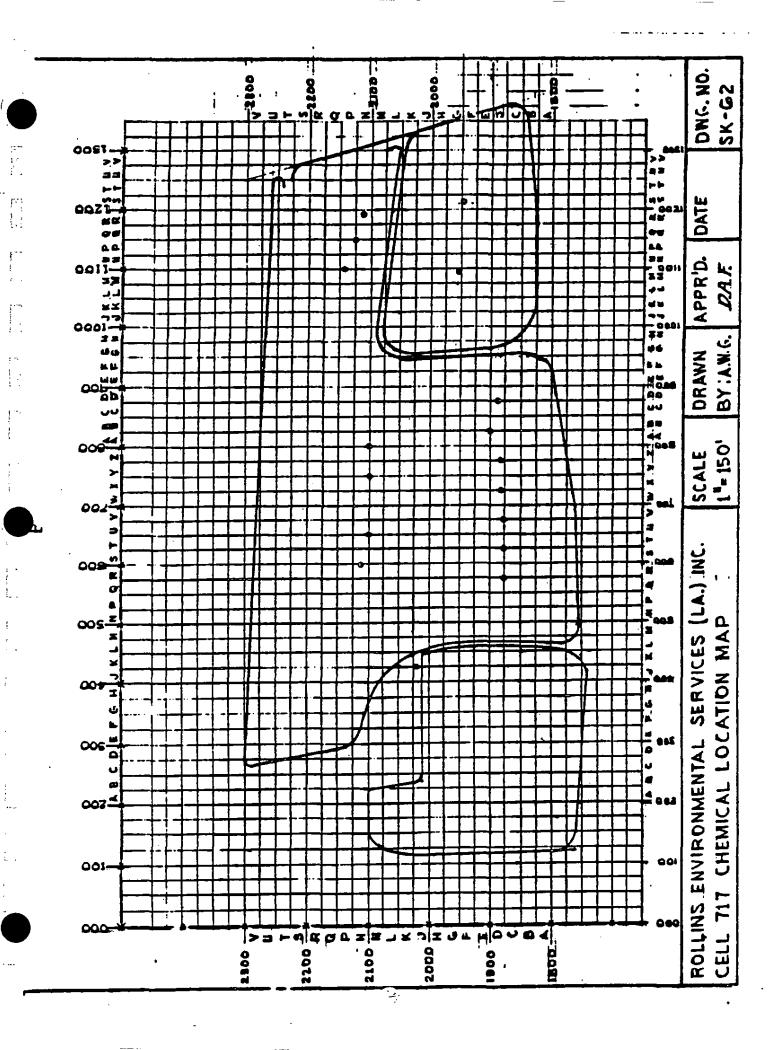
### A. Coordinate System

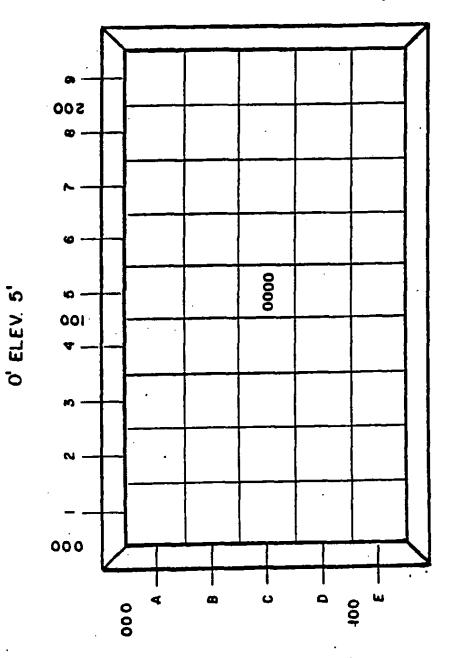
- 1. A north, south, east, and west coordinate system on a 100' grid is field surveyed and reference stations are visibly located on it around cell.
- B. Field location map 8" x 114" with field coordinate grid system superimposed on it in 25' grids.
  - This map, in conjunction with reference marks placed on leachate pipes is used daily to field locate chemicals in plans and elevation then plotted on it.
- C. Grid system drawings 24" x 36" with field coordinate grid system superimposed on it in 25' grids.
  - These drawings are used for permanent records of chemical locations on them.
  - They are a series of drawings covering the cell in plan and elevations.
     Each individual drawing covers an approximate area of 500' x 600' in plan and 5' in elevation.
  - 3. Chemicals are located and identified on these drawings by B.R. numbers which are assigned by lab personnel.

### D. Cross Reference of Chemical Locations

1. Lab Technicians enter by B.R. number each load of chemicals that are received in their log. This is used for cross referencing of grid system drawing block identification letters and numbers per load. See attached examples.

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TYPICAL

ROLLINS ENVIRONMENTAL SERVICES LOUISIANA INC.

Time Decision Location S-3 190:11 TRAKER 762 HAUCH 34,000 POUNDS \*160 000 000 2XX 1X7 000 # 3003 COUPANT PHYSICAL MAINTESTS אאב יפטרום כ 3-8-84 0000 DESCRIPTION DATE **51. UDAE** 

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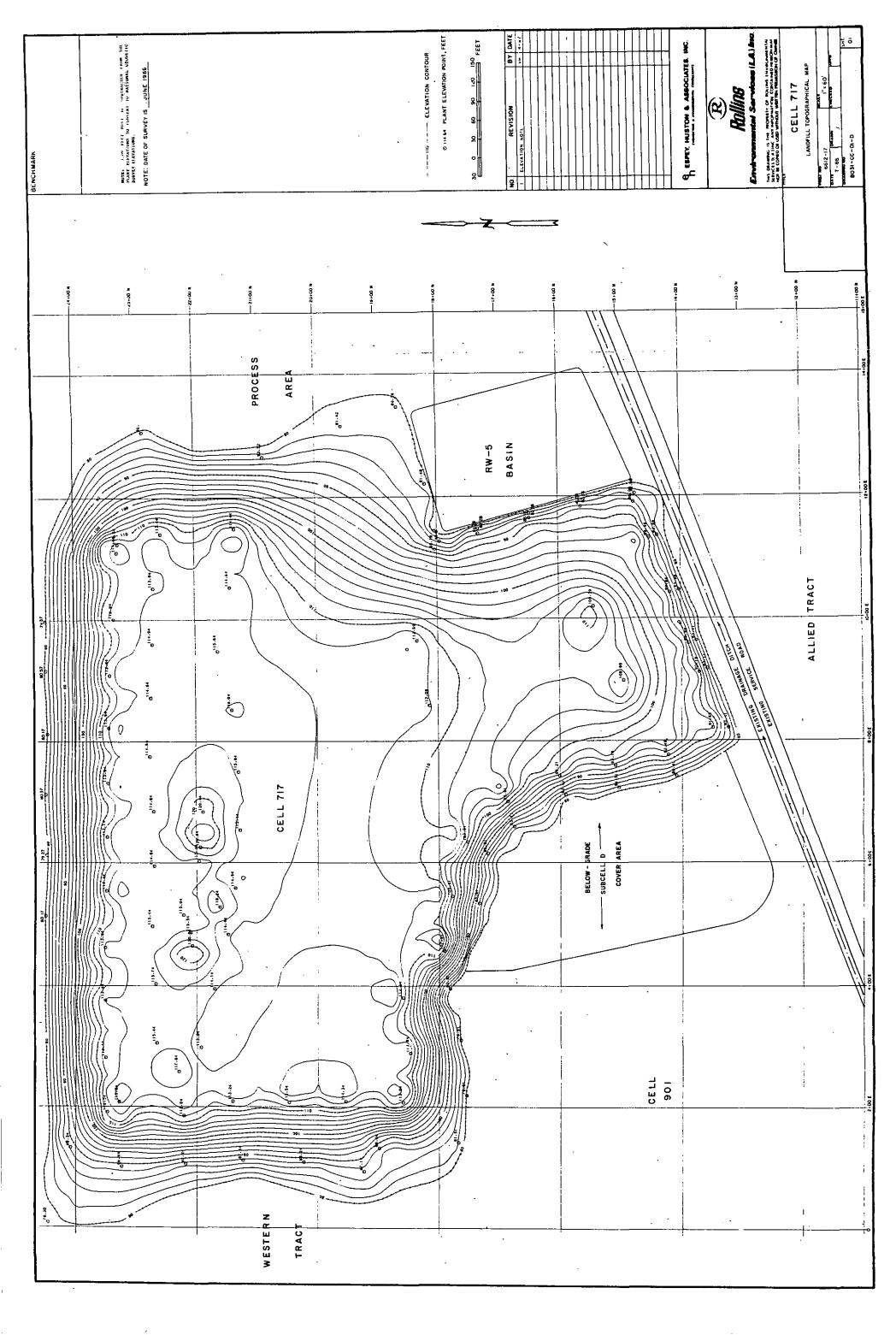
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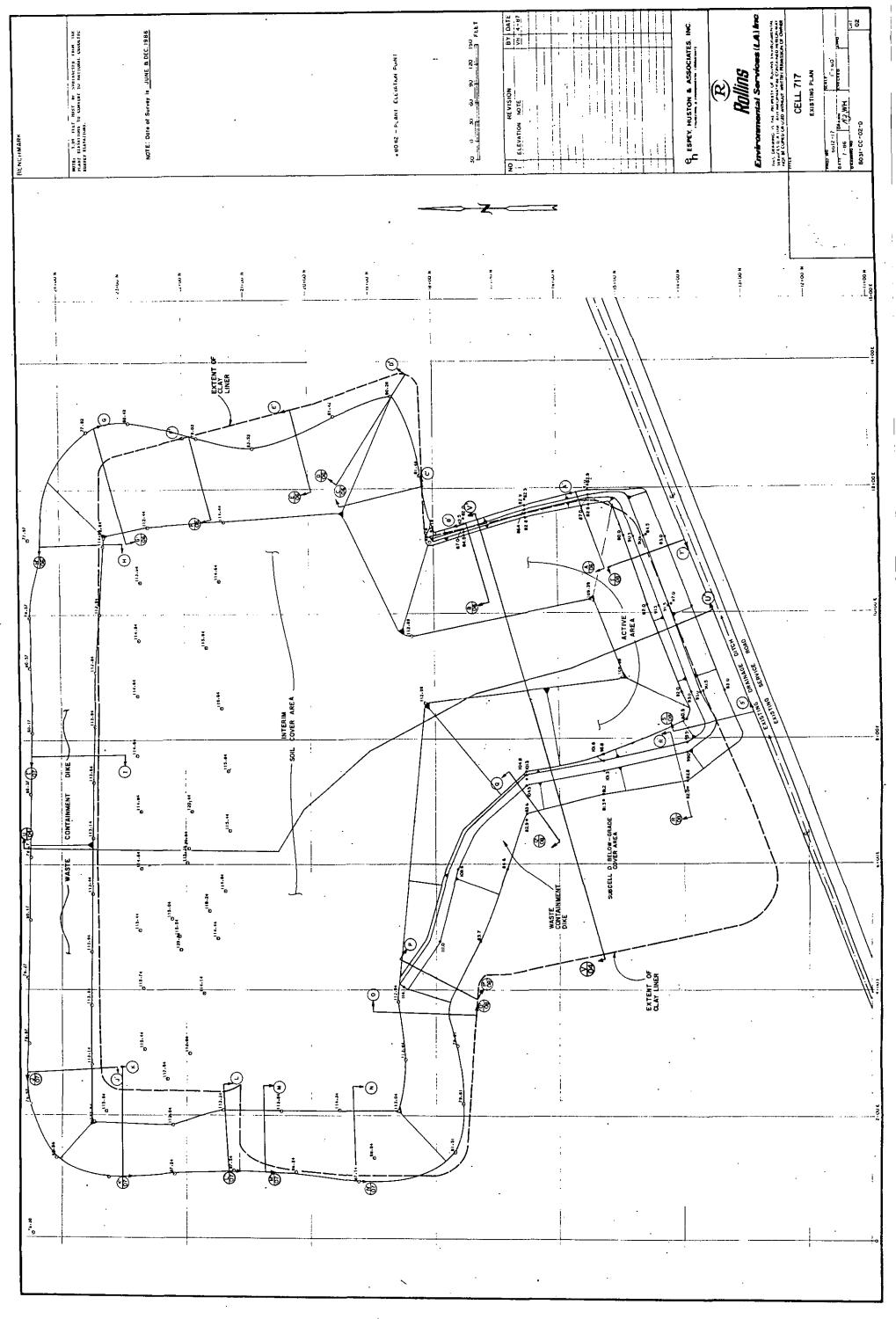
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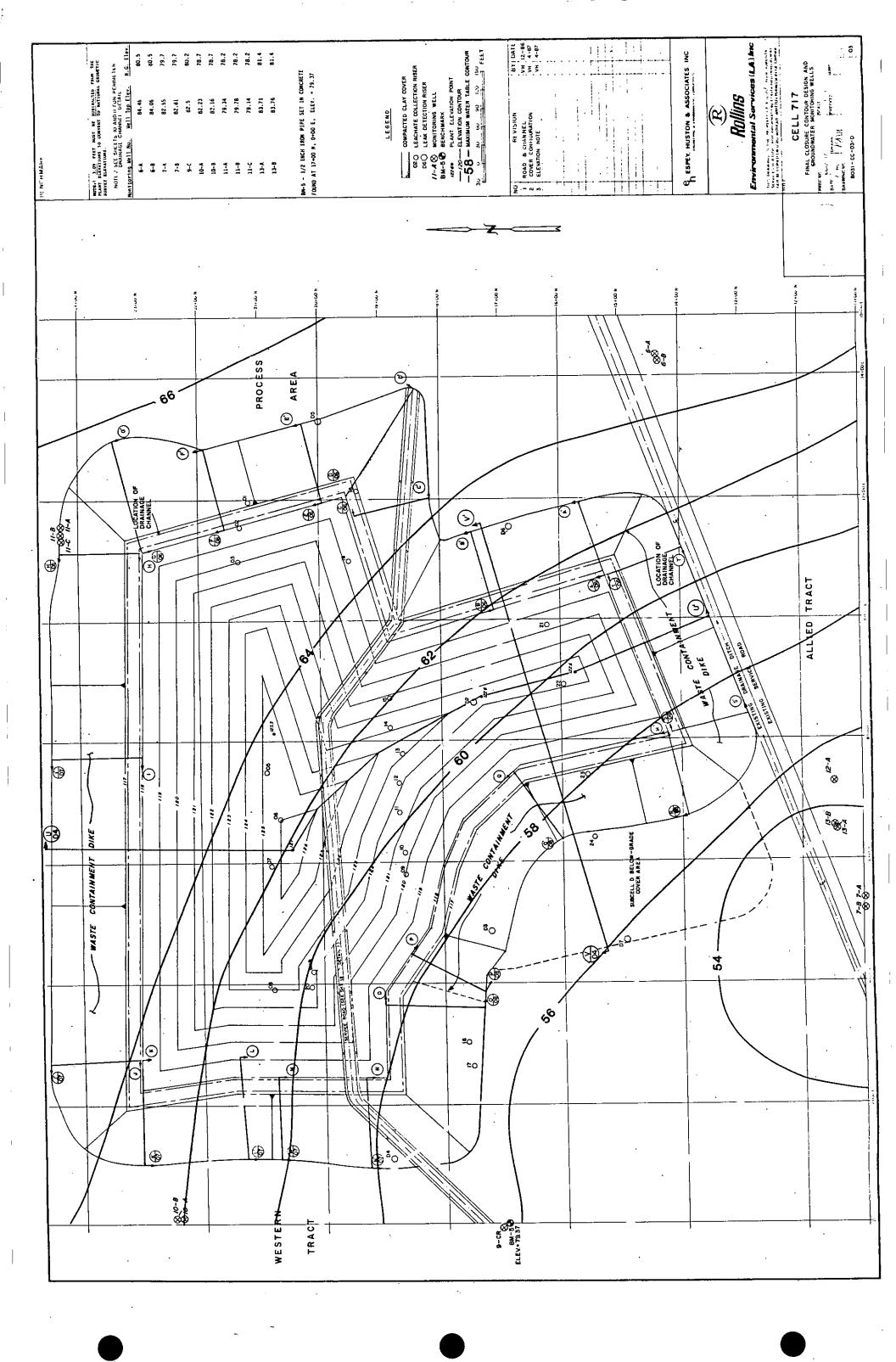
### LIST OF DRAWINGS

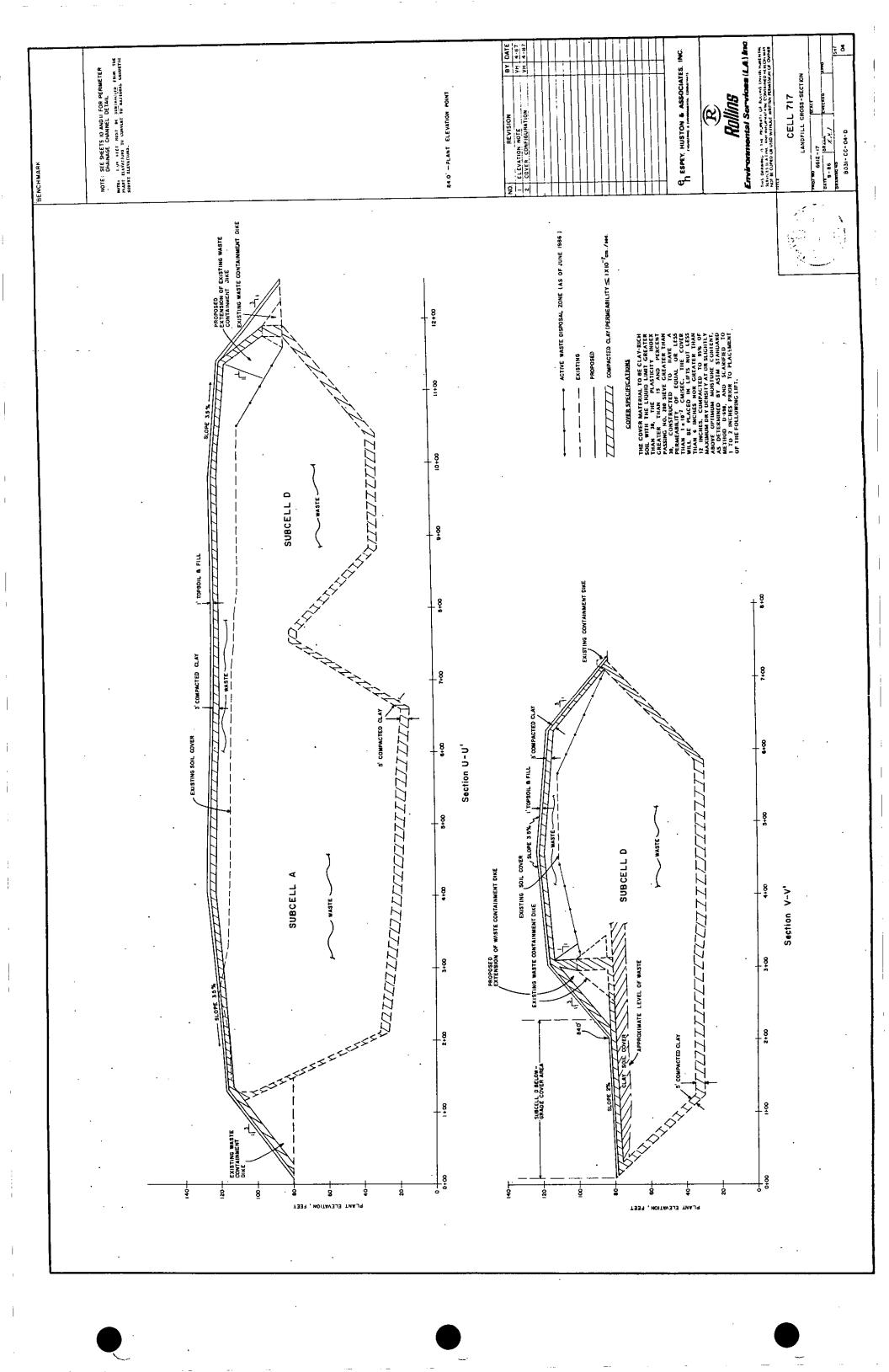
Dwg. No.	<u>Title</u>
01	Landfill Topographical Map
02	Existing Plan
03	Final Closure Contour Design and Groundwater Monitoring Wells
04	Landfill Cross-Section
05	Clay Liner Plan
06	Clay Liner and Cover Tie-ins
07	Clay Liner and Cover Tie-ins
08	Clay Liner and Cover Tie-ins
09	Final Cover Drainage Design
10	Upper Perimeter Drainage Channel
11	Upper Perimeter Drainage Channel
12	Perimeter Drainage Channels Profile
13	Perimeter Drainage Channels Profile
14	Drop Chute Entrance Detail
15	Drop Chute Structural Detail
16	Structural Detail Notes
17	Drop Chute Outlet Detail
18	Miscellaneous Structural Details
19	Leachate Collection and Leak Detection Systems
20	Leak Detection System Details
21	Leak Detection and Leachate Collection Systems Details

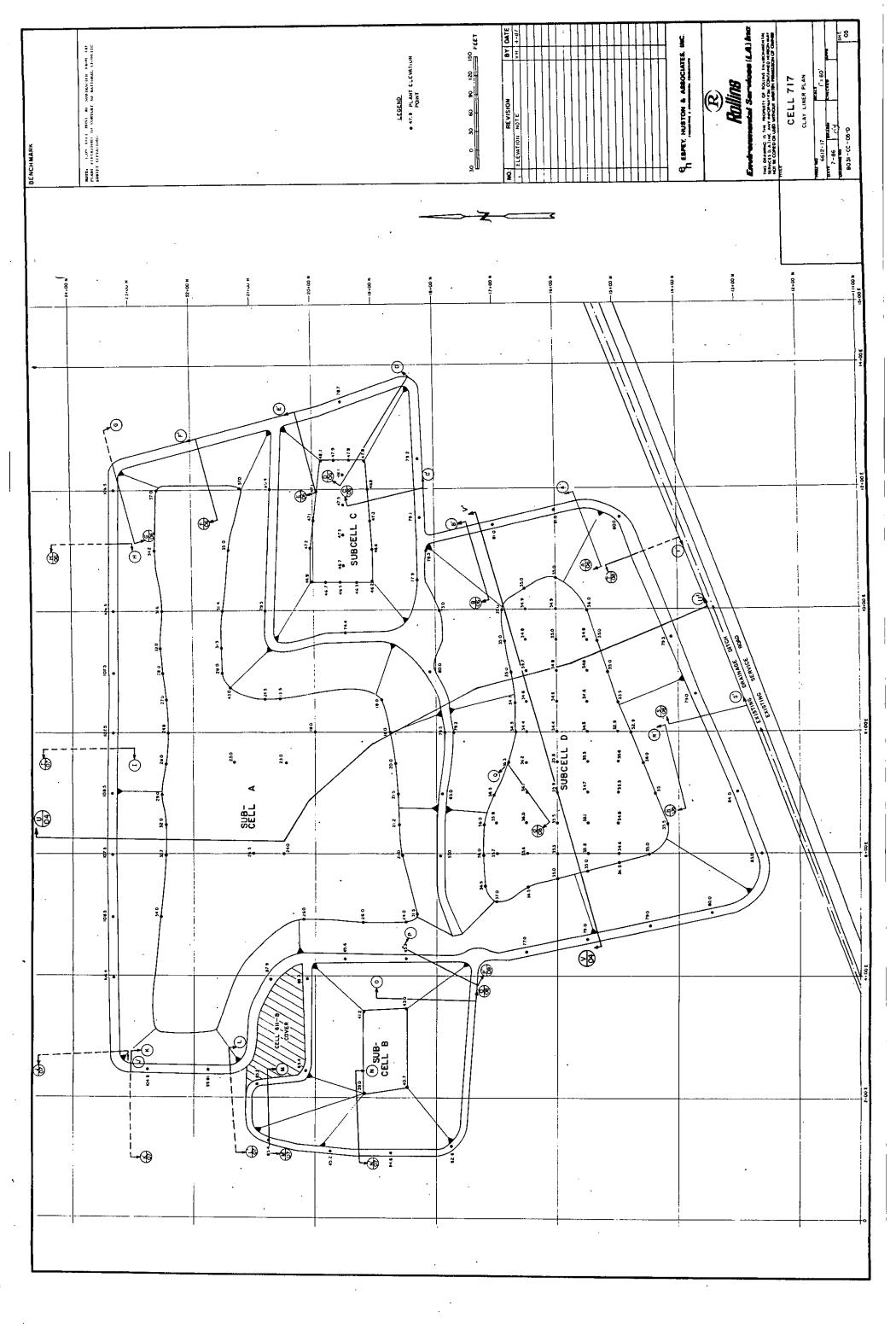


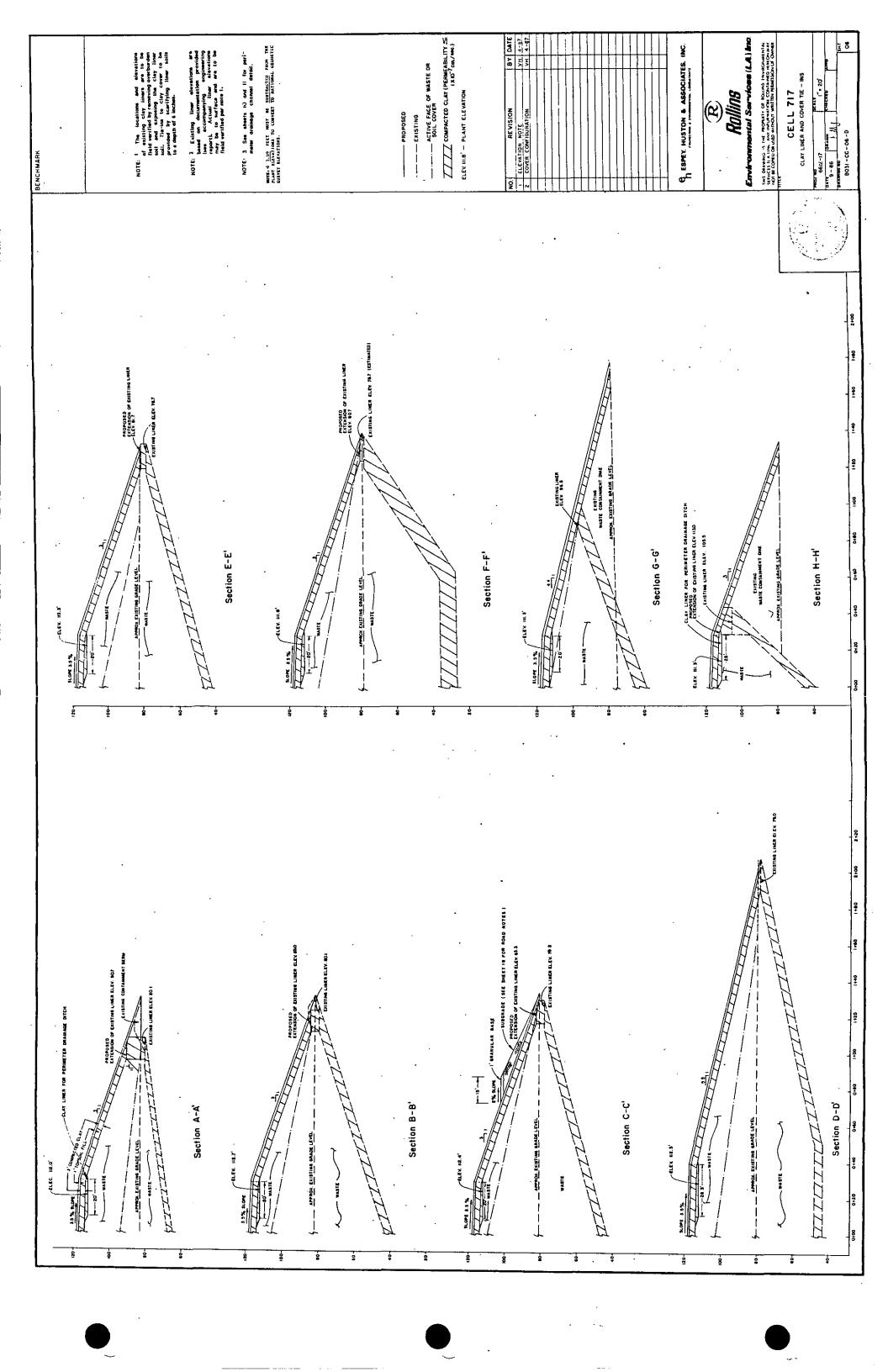
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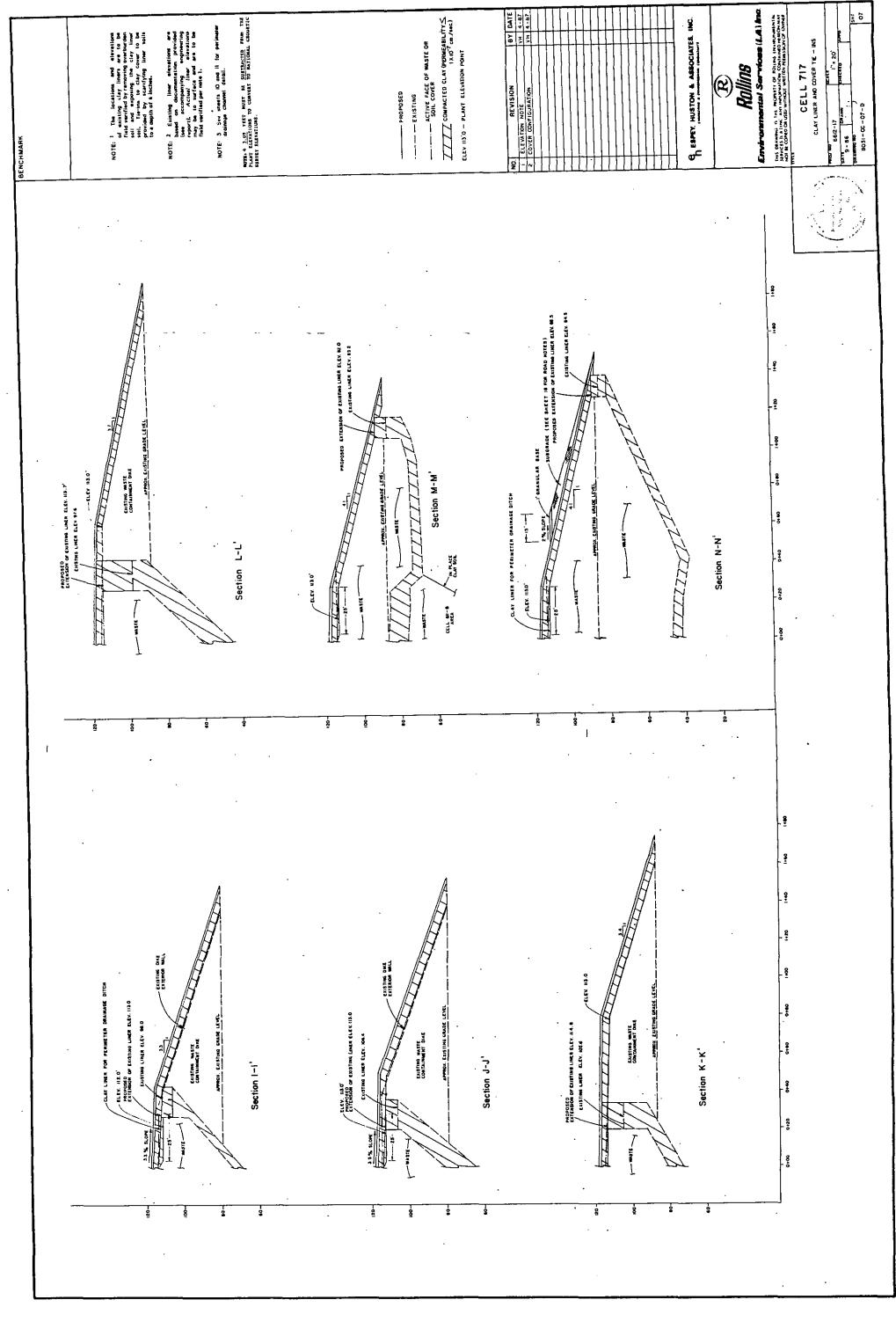


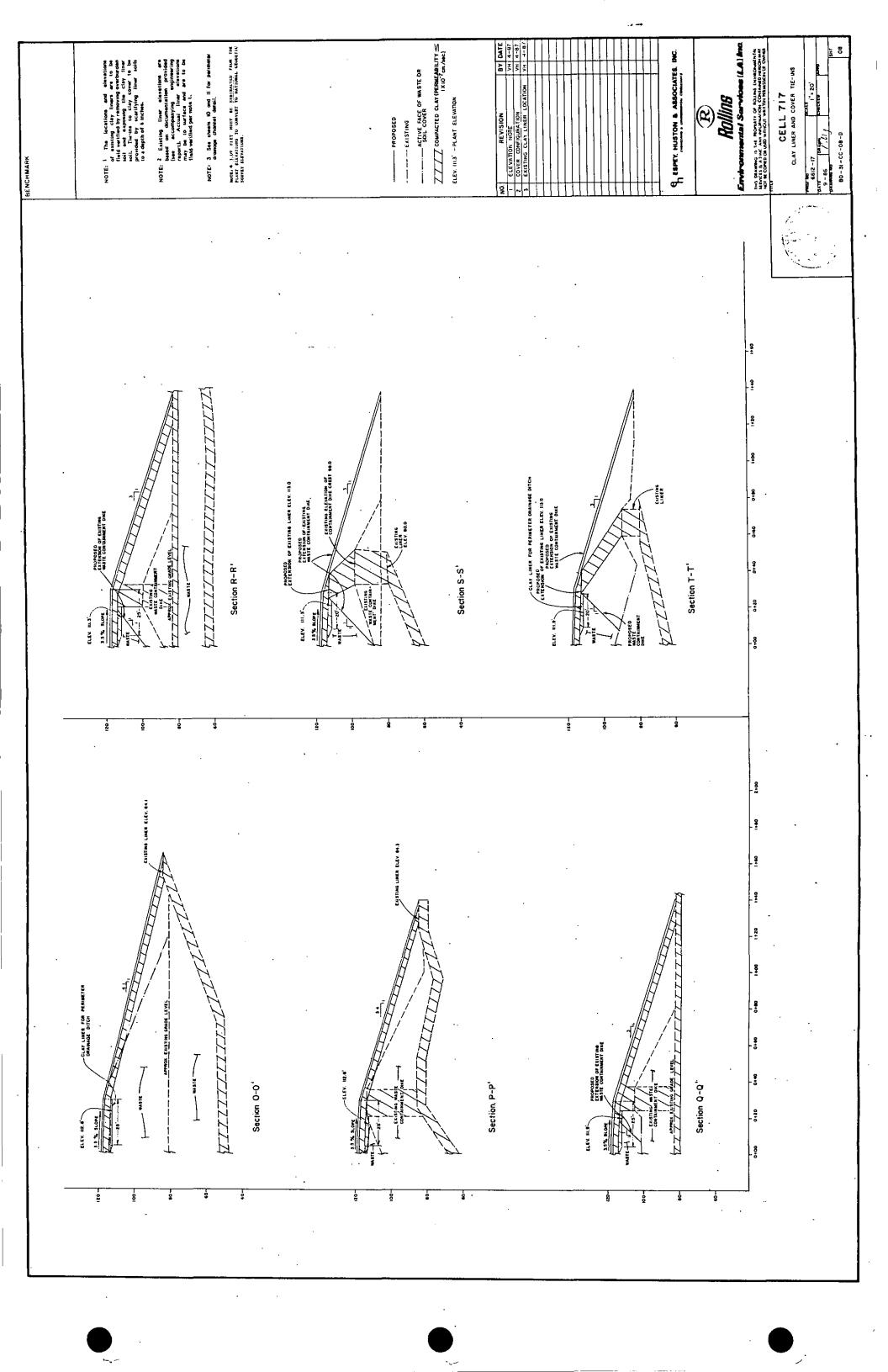


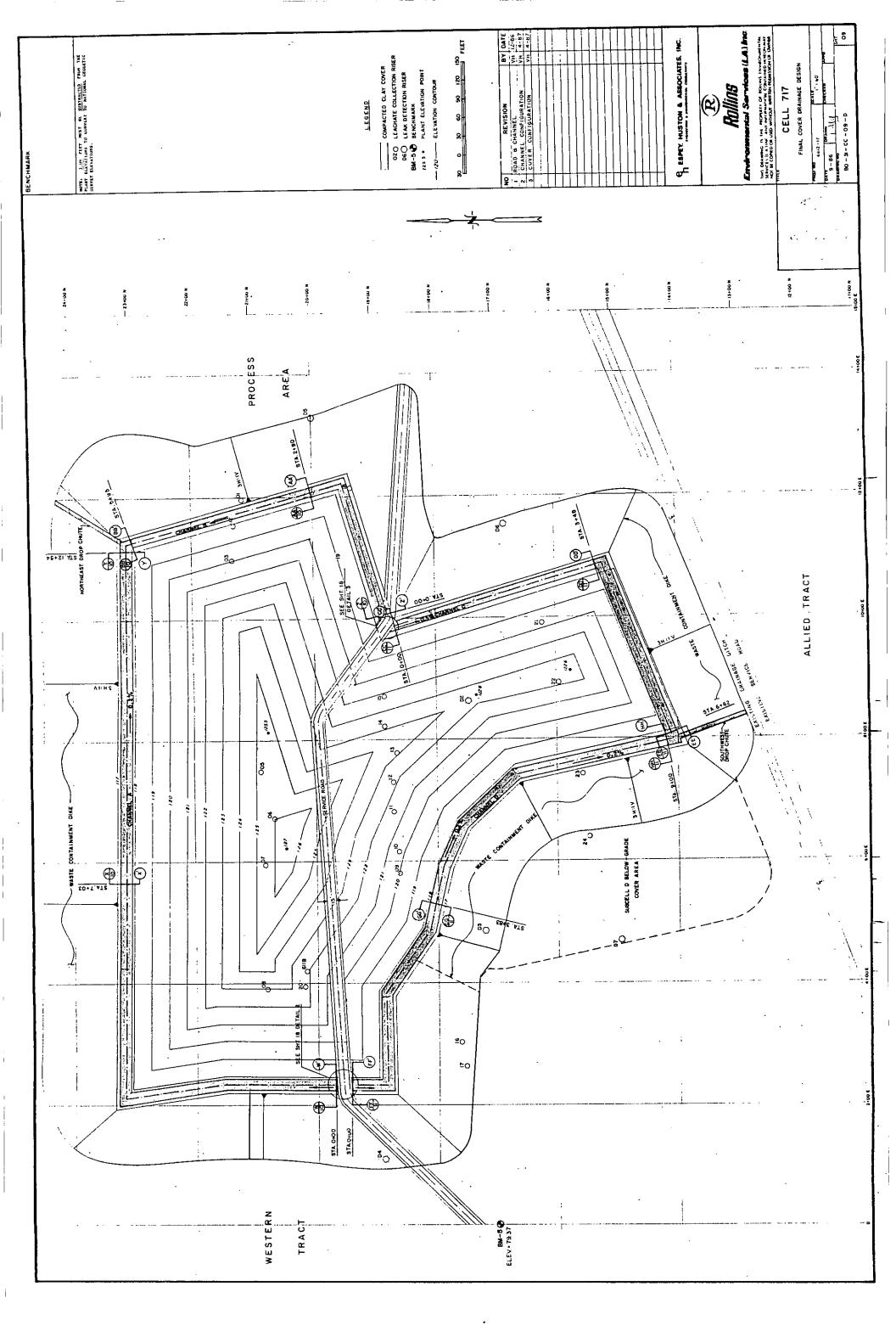




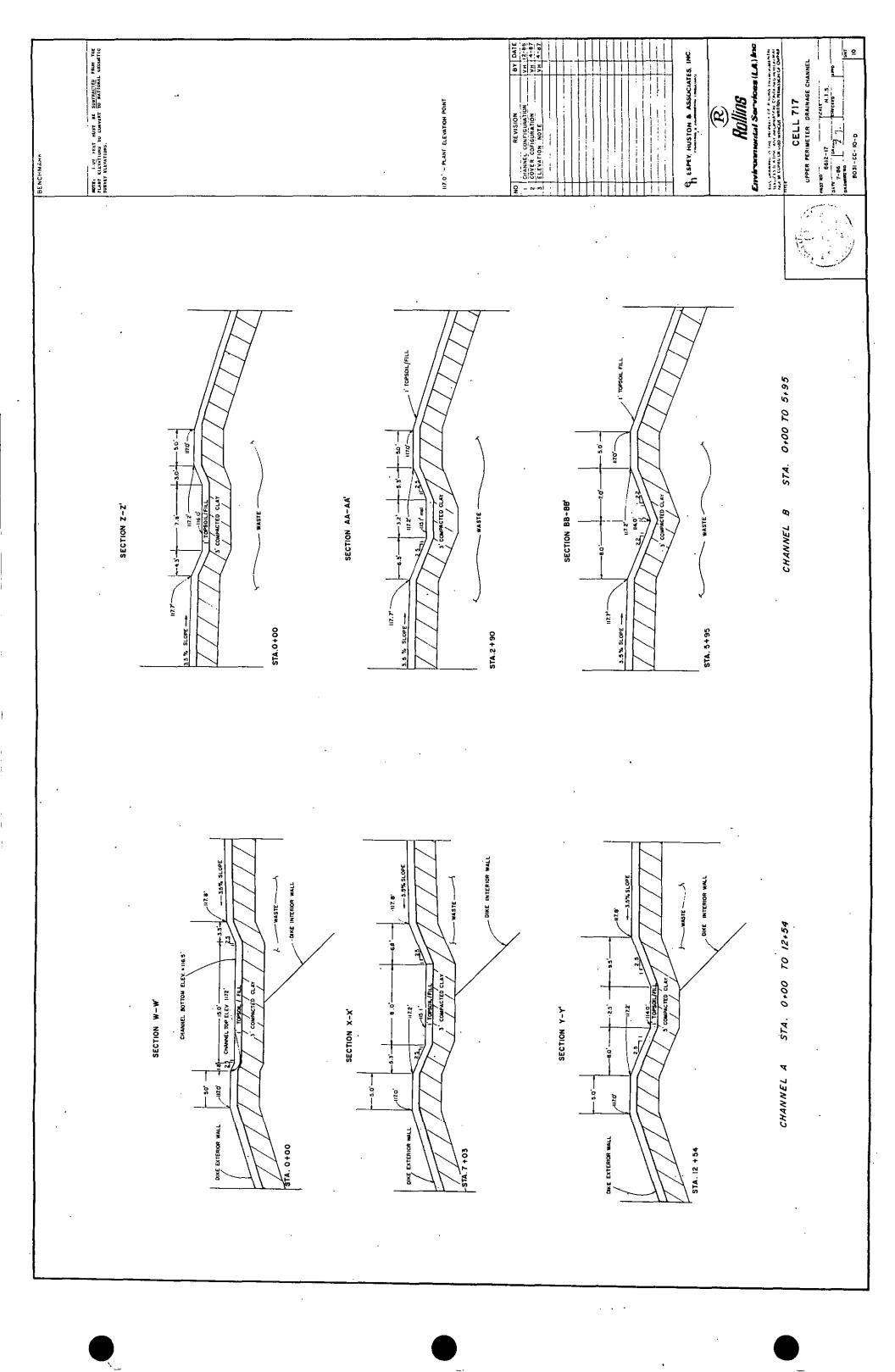


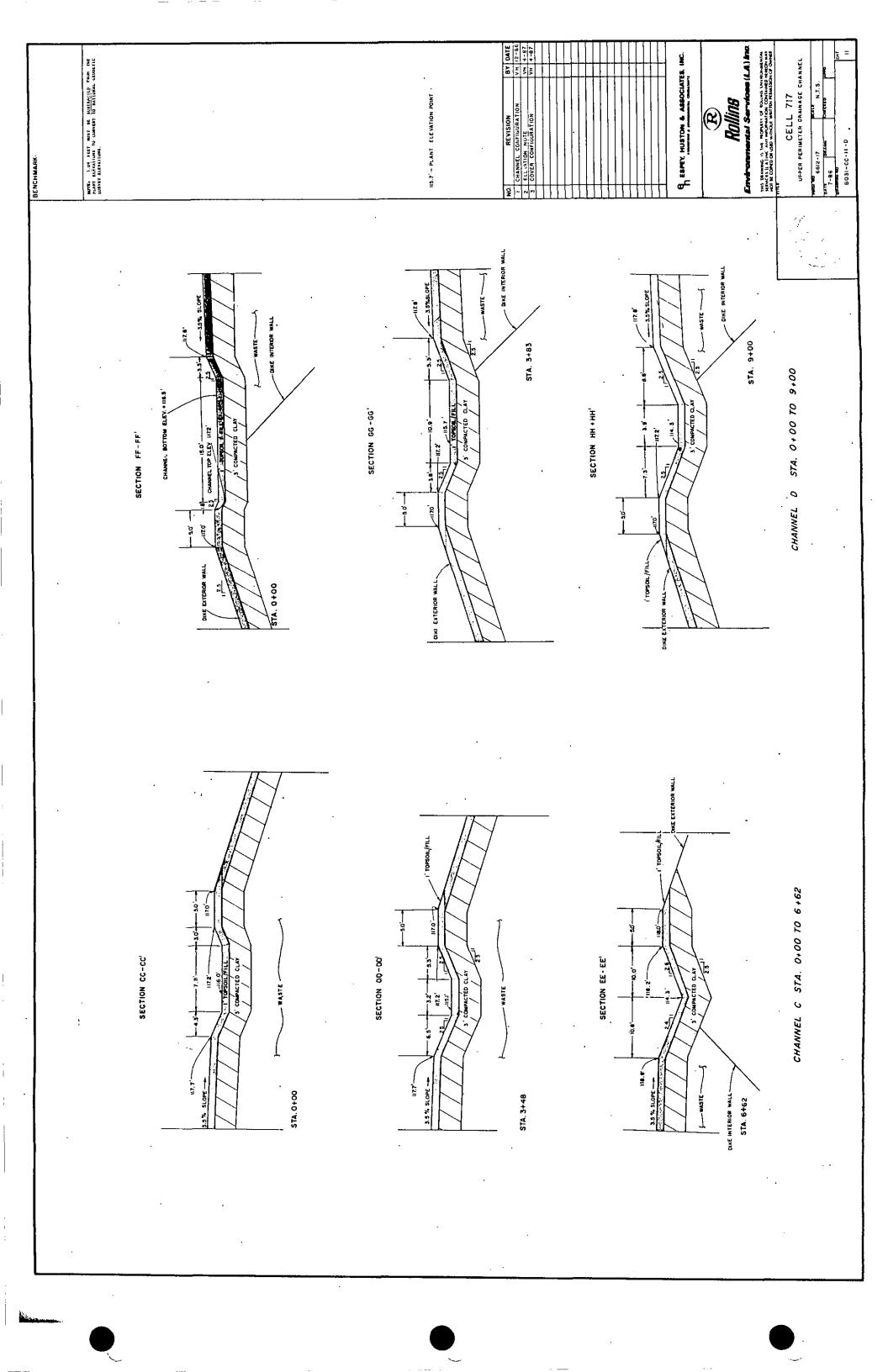


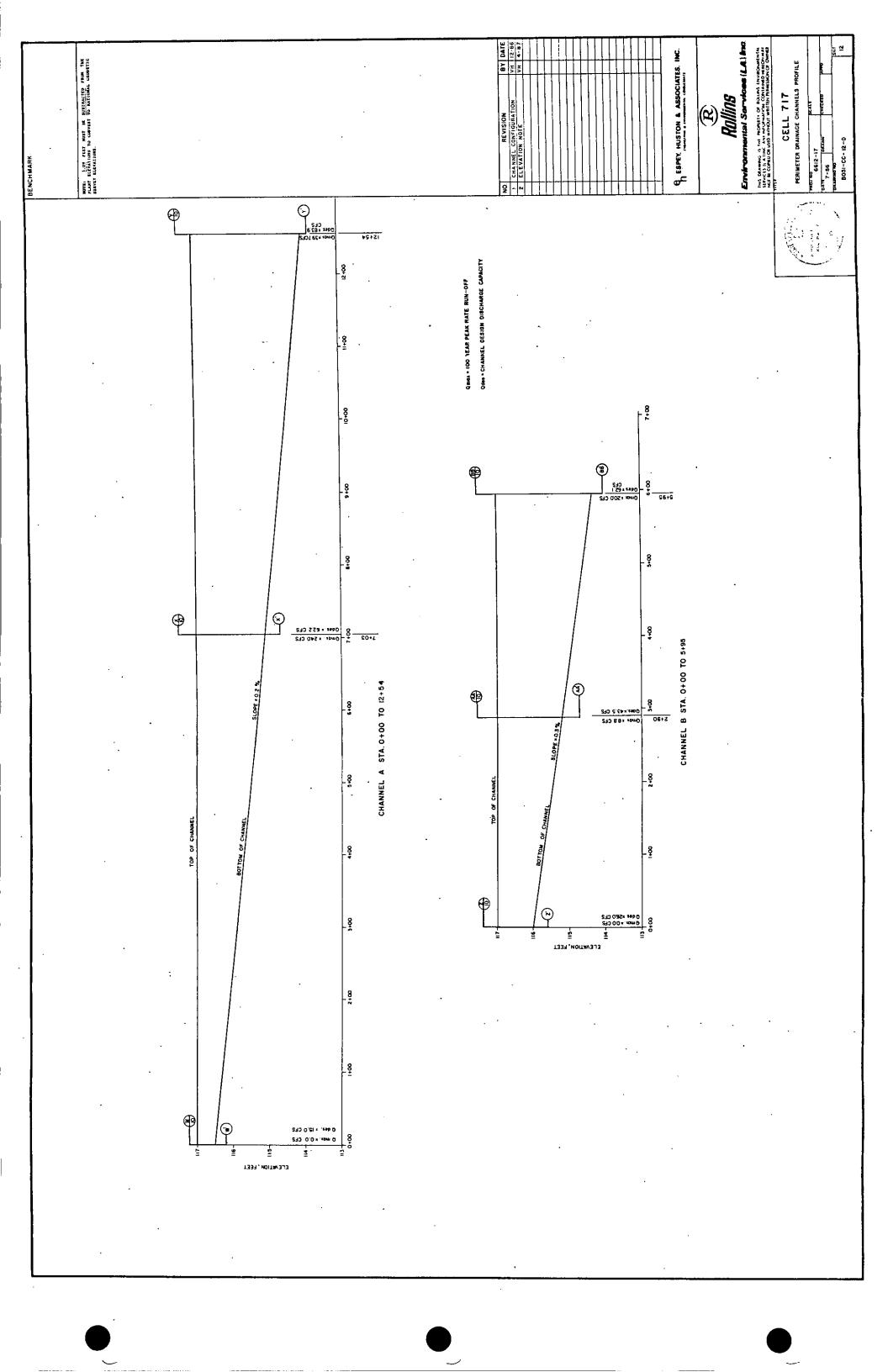


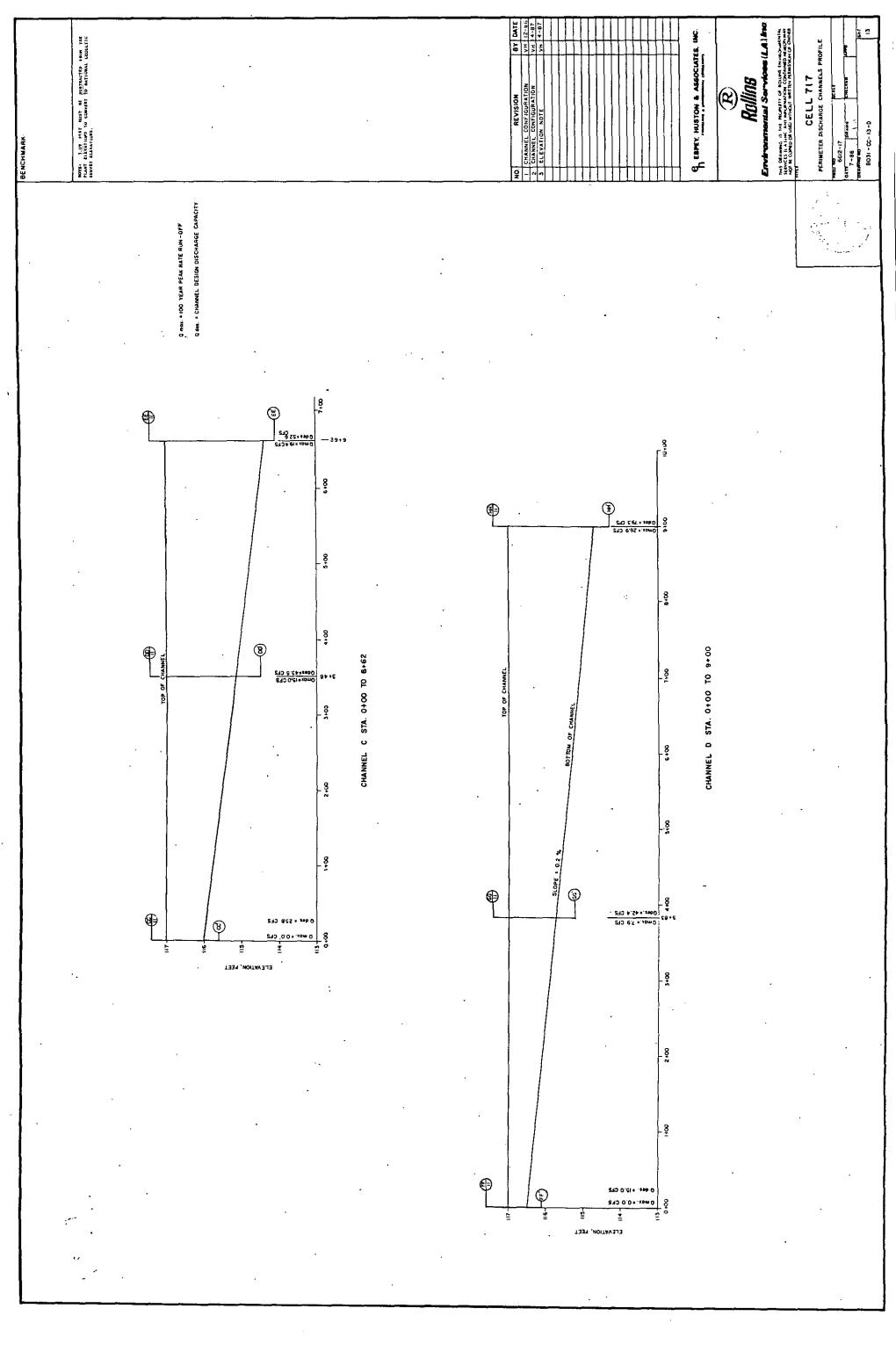


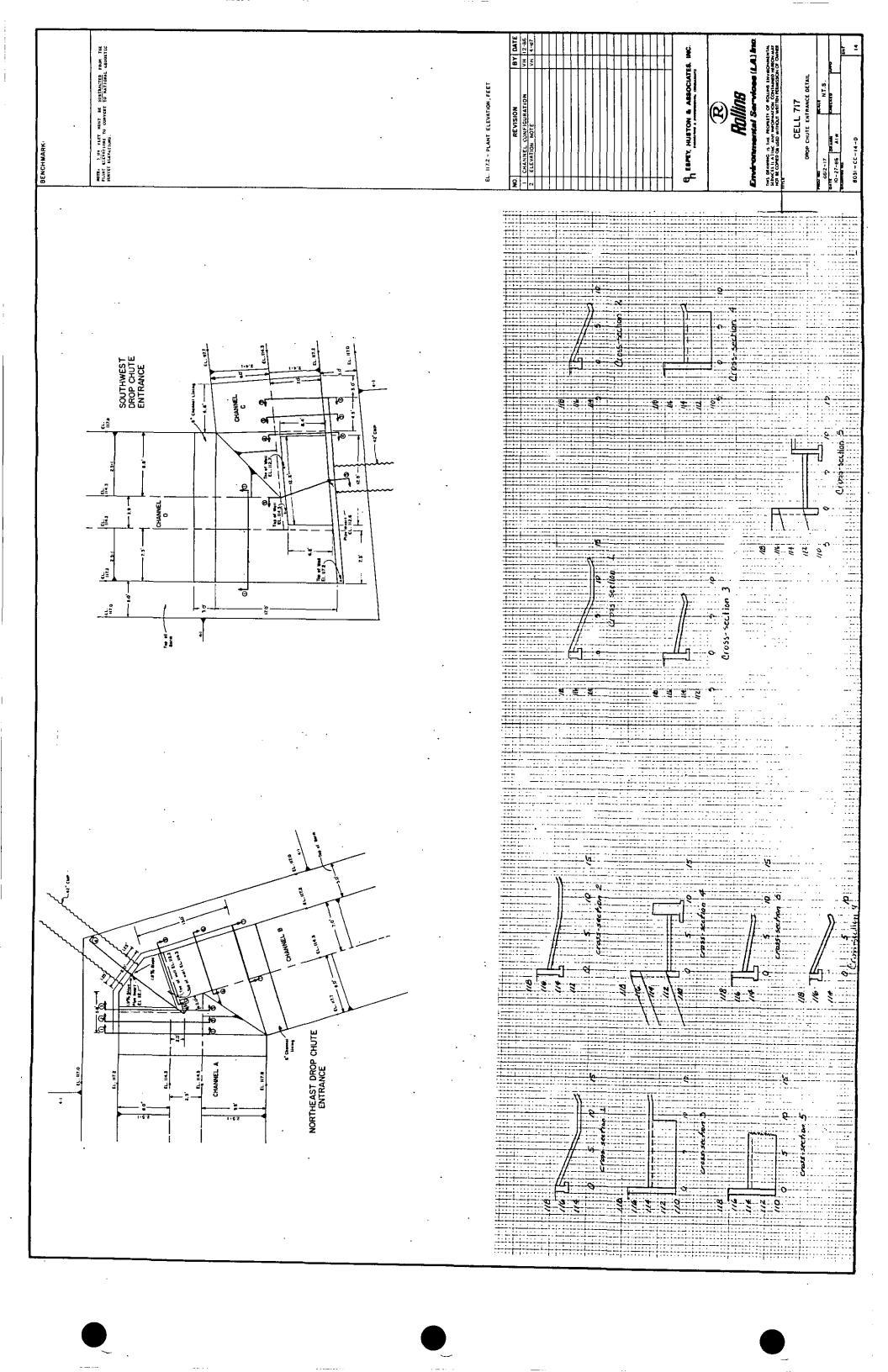
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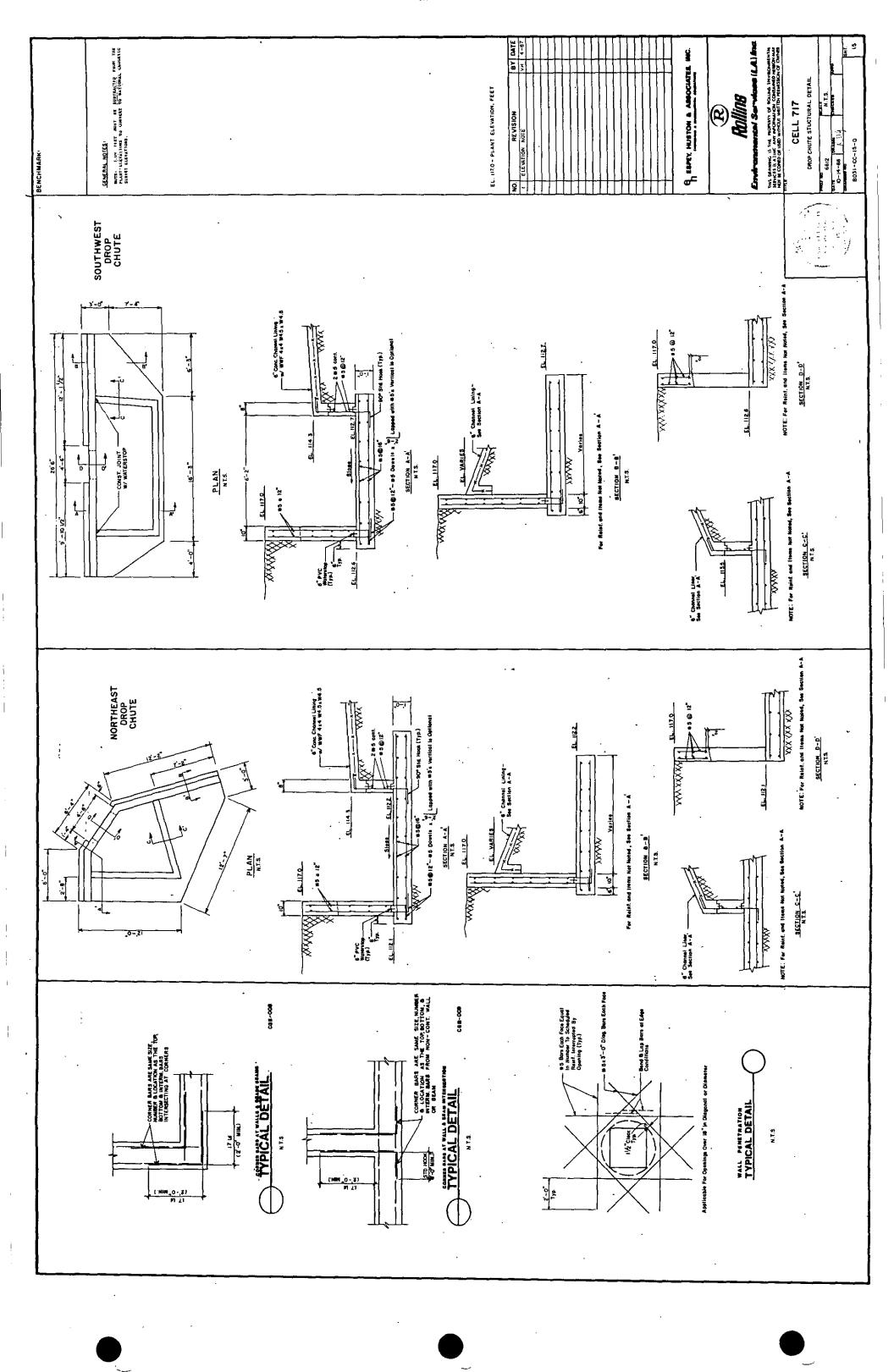












ROMINS Environmental Services (EA) Inc. G ESPEY, HUSTON & ASSOCIATES, INC. THIS DEAVENG, IS THE PROPERTY OF BOLLING ENVIRONMENTAL SERVICES IL ATTINC ANY INFORMATION CONTAINED INTERCOL INFORT WITTEN PERMETSING OF DAVISE THAT IN STRUCTURAL DETAIL NOTES CELL 717 REVISION 10-14-84 | 1.1(f) 299 RINFORCE CONCRETE AS SHOWN ON FLAME OR AN SPECIFIED. SUPPRET RESPONDENCE OF PERSONNELS CONCRETE SACKES OF CALLES MITH SHEET METAL BASE, WISD TO REINFORCEMENT, SO AS TO WAINTHIS ITS POSITION AS SPORES OF PLAME. CHECK TO SEE THAT RESPONDENCE MAINTAINS ITS PROFES POSITION DURING PLACEMENT OF CONCRETE. PARAICATION DEFALLING AND EXECTION SELLS SI IN ACCORDANCE WITH ACE "MILITHE COST REQUESTEDATE FOR RELIFERCED CONCESS", ACE 318, and ACI "MARCIAL OF FRANCAS PRACTICE FOR DEFALLING REINFORCES CONCESSES STRUCTURES", ACE 315. 2. WILDED WIRE PARMIC SEALL BE SMOOTH WEIDED WIRE PARMIC COMP. TO ANTH AMES. 1. ALL REINFORCING STREE SEALE CONFORM TO ASTN A&15, GRADE 60. A. MET EASTE. INMIDITATES AFTER THE CONCERTS EAS SAIDS ITS INITIAL SET WITH THE PRILAD OF WER COTTON MATERIALS. THE PRILAD OF WET COTTON MATERIALS WAS RESERVED. THE THE SOCIETY MATERIAL OF WETS CONTRIBUTIONS. THE THE SOCIETY MATERIAL OF SOCIETY MATERIALS OF SOCIETY MATERIALS OF SOCIETY MATERIALS. THE LAND TO SOCIETY MATERIALS OF SOCIETY MATERIALS OF SOCIETY MATERIALS OF SOCIETY MATERIALS OF SOCIETY MATERIALS. OF SOCIETY MATERIALS OF SOCIETY MATERIALS OF SOCIETY MATERIALS OF SOCIETY MATERIALS OF SOCIETY MATERIALS. SATURATED FOR A LAST REVER MATERIALS OF MATERIALS OF SOCIETY MATERIALS AND MATERIALS. COTTON MATA. IMMEDIATELY AFTER THE CONCUSTS 464 TAKES ITS THE LIBITAL SET AND THE PRINCIPLES OF SHEATHER SET CONCUSTS. THE MATE SHEATH SETS CONCUSTS. CONCUSTS HERE MATE SHEATH SETS CONCUSTS. THE MATE SHEATH SETS OF THE TAKEN SHEATH SETS. THE COTTON MATH. COTTON MATH. SATURATED SO THAT, WERE CONTRIBUTION, MATER WILL THE COTTON MATH. SATURATED SO THAT, WERE CONTRIBUTION, MATER WILL THE SHEATH SETS SHEATH SETS THE MATER SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SETS SHEATH SHEATH SETS SHEATH SHEATH SETS SHEATH SHEAT AFTER FLACING CONCRETS, TANY TROUNDULLY TO COMBULIDATE THE CONCRETS FOR A TOWN TO THE UNITS AND THE UNITS AND THE UNITS AND THE UNITS AND THE UNITS AND THE ACTUAL OF THE WORLD TO THE ACTUAL AND THE ACCURATE TO REQUIRE CONCRETS IS STILL GREEN BY THE APPLICATIVE MANDRIED TO REAR A MAN'S USIDIST, WOOD FLAXT TO A SHOOT PRISE. NEMBRANCE CHRING. APPLY SIRAGAND CHRINALD MEMBRAS CHRIN CHRONOLARIA MATER CONCRETE MA TAKEN CHRINAL COPELATION OF REGAR-INNEDIATELY ATTEN CONCRETE MA TAKEN ITS INITIAL SET AN INITIALISM OF THE SURFACE AND SEEN COMPLETO. APPLY MITTER SPA TO COVER ALL THE SIRAGE MITTA A MUSICOM CONTING, FOLLOWER THE METHODS RECOMMENDED BY THE MANDRACHMEN. CURA CONCRETE PLATING URING SITEMS NATE, OR ABBREAMS CURING COMPOUND. 7 ä 1. CONCRÉTE COMETRUCTION SERAL DE 19 ACCORDANCE WITH THE AMERICAN CONCRÉTE INSTITUTE SUILDING CODS REQUIENDENTS FOR RELAFORCED CONCRÉTE, ACT 318. 4. TO INCREASE SIMPO AND MOMERALIZEY OF THE COMPRET, THE COMPLEÇOR WAY, USON AFFORM. OF THE EMCHANGE, USE A HIGG-TANGE WANCED FROMCED FROMCED FROMCED THERE AND CONTRACTOR TO ANY C 454, TIPE F. ACCEPTABLE PRODUCTS AND ALL COMPRESSIVE STALL BS MCREAL WRIGHT CONCRETE AND SAVE A MINIMUM
 DAY COMPRESSIVE STREAGTS OF 3,000 PSI. THE SUPERPLANTICIES HUST AS USED IN STRICT CONFORMACE WITH THE MANUFACEMENT HAS CONCERNED HAVE ADDRESS TO THE CONCERNE HAS A THE ADDRESS HAS A THE ADDRESS HAS A THE ADDRESS HAS A THE ADDRESS HAS A THE ADDRESS HAS A THE ADDRESS HAS A DOSING HAS ADDRESS HAS ADDRESS HAS ADDRESS HAS ADDRESS DEVELOPMENT. SUPERFLASTICISM POLLOWS UNLESS THEM REALL BE NO MORITORIAL COMPTROCTION JOINTS IN CONCRETE RECEPT MEETS NOTED ON PLANS. 6. USB OF ADMIXTURES CONFAINING CALCIUM CALCAIDS IS NOT PERMITTED. 3. ALL COMCERTS SMALL MAVE A MAXIMUM MATER CEMENT RATIO OF 0.45.

A. CONCRETE EXPOSED TO EARTH ON WAXTHER - 2" (CLE)
B. CONCRETE CAST PERMANENTLY AGAINST EARTH - 3" (CLE) PROVIDE A SHOOTH PORMED PINISH TO ALL EXPORED SURFACES.

9. MINIMUM REINFORCING STEEL COVERAGE SHALL SE AS OTHERMIES MOTED!

9. CHAMPER ALL EXPOSED RDGES 3/4 ERCH EXCEPT AS BOTED.

TRE HAZIMUM PĘZRAJSRIBLE KLUMP APTER ADDITION IS SEVEN INCHES.

A. GIPPORD-HILL - "PSI SUPER".
B. N. R. GRACE - "PROM-19".
C. AMERICAS ADMITTERES - "MEMBER".
D. ON APPROVED EQUAL.

1. APPLICABLE CODES AND STANDARDS - ALL CODES AND S-SMALL BE THE LATEST EDITION. 2. SEE SHEETS FOR CHANNEL DIMENSIONS, ELEVATIONS, AND

CONCRETE

GENERAL HOTES

